

POPULAR PHOTOGRAPHY



WOW!!
SONY'S
A7R II LAB
& FIELD TEST



HOW TO MAKE GREAT PICTURES

Film Rules

25 tips for
shooting it now

Return to Cuba

How to capture
this new era

U.S.A. LANDSCAPE PHOTOGRAPHER OF THE YEAR

Winners share
their secrets for
amazing shots



MARK SELIGER
PHOTOGRAPHED BY TIM MANTOANI

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By Peter Kolonia

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Like vinyl records, film has held on to a die-hard fan base that keeps the medium alive. Here are some two dozen tips for photographers wanting to give analog a try.

By Dan Richards



COVERS: BRIAN KLUTCH (CAMERA); TED GORE (SAND DUNES). THIS PAGE: BRIAN KLUTCH (FILM); MICHAEL CHRISTOPHER BROWN/MAGNUM (CAR); GRANT ORDELHEIDE (LANDSCAPE). NEXT PAGE: DUSTIN SNIPES (SWIMMER); TIMOTHY PELCZYNSKI (CHILD).

α

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Featured Photo By Chris Burkard

*on select Slik Tripods - Ends 10-31-15



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PETER HURLEY

Coming Soon?

On the outside, it looks like a simple black box, the front dominated by a lensmount and the back festooned with control buttons, ports, jacks, and other

connectors. But it's what's inside Canon's ME20F-SH that's causing all the buzz.

Announced in late July and due out by the end of the year, this \$30,000 camera holds a near-full-frame (20x36mm) CMOS sensor that shoots Full HD (1080p) video at up to ISO 4 million. It wasn't until I saw a preproduction version of this camera at the Canon Expo 2015 in September that I fully appreciated the implications. Simply put, it not only shoots in the dark—it captures recognizable colors and a surprising amount of detail. A demo designed to mimic a hat shop blew me away: With the light dimmed well past the point at which I could even make out shapes, a monitor attached to the camera revealed the scene down to the logos on the baseball caps.

Perfect? No. The footage looked mighty grainy, and the sensor's light-gathering gifts come from huge yet relatively few (2.26MP) pixels. But this camera isn't about producing big, sharp prints. It's meant to provide video accurate enough for law-enforcement applications such as facial recognition. Who else will benefit? Documentary makers chronicling anything from nocturnal animals to deep-ocean life. TV producers catching people at unguarded moments in very little available light. Any company, government agency, or individual filming what happens when the lights are off.

We should have seen this coming: Canon announced it was developing the sensor in 2013. And while this camera was the closest to market that Canon showed off at its quinquennial expo, my colleagues and I saw some prototypes that pave the way for other astonishing feats. A 600mm f/4 DO BR lens uses the latest optics to shave 30% off the weight of the current model. An 8K video camera and production monitor seem ready to transform the way movies are shot. A new 120MP APS-H-format (1.3X crop factor) sensor, shown in a body based on the EOS 5Ds, produces a level of fine detail we've seen only from medium-format cameras. And, on the truly experimental side, a 250MP APS-H sensor (you read that right) in a mystery-box of a camera was paired with a mega-telephoto lens to shoot video in Paris of someone standing on the Eiffel Tower and waving—at a distance of several miles.

Visit our Facebook page to watch our video interviews with Canon USA's Chuck Westfall at the expo. And write to us at PopPhoto@bonniercorp.com about how you would use new tools like this to reshape your own photography.

Miriam Leuchter



NEWSSTAND Sony's full-frame Alpha 7R II, photographed by Brian Klutch, packs scads of resolution. Read our full test report on page 72.

SUBSCRIBER Ted Gore's breathtaking photo of the Mequite Sand Dunes in Death Valley (page 52) helped him earn the title U.S.A. Landscape Photographer of the Year for 2015.

POPULAR PHOTOGRAPHY

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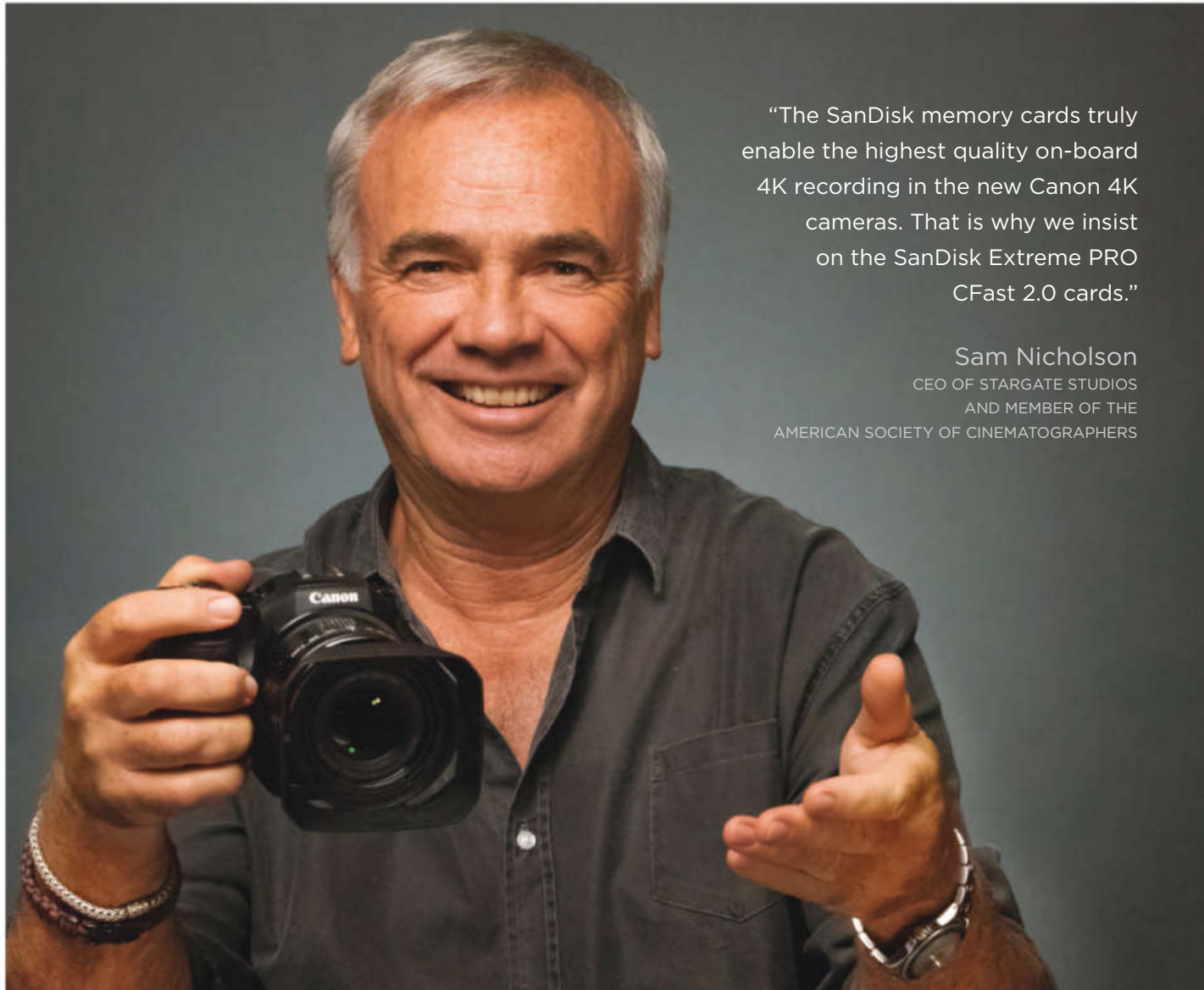
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ImageMaker Patrizia Castiglione

Born and raised in Montreal, Patrizia Castiglione has been an established fashion, wedding and advertising photographer for over 15 years. Her devoted attention to detail, as well as her keen fascination with creating concepts that evoke fantasy, has been a defining factor in distinguishing her work. During the past few years, Patrizia has had the privilege to educate others in the field of photography. Patrizia owns the Magnolia Studio in Montreal and won best photographer of the year by the Canadian Wedding Industry Awards in 2014.



The image shot with the PENTAX 645Z camera and the HD PENTAX D FA645 55mm F2.8AL[IF]SDM AW lens
Camera Setting f3.5 at 1/100 Sec., ISO 400 © Patrizia Castiglione

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Along the Hood River are the majestic lavender farms that stretch for acres flooding the grounds with deep violet hues. We will conclude the

day photographing the sun as it sets over the Columbia River Gorge, a wondrous river canyon that cuts through the surrounding mountains for over 80 miles.

We begin our second day in Oregon photographing the Vista House, an iconic landmark that proudly sits atop the Columbia River Gorge. Next we depart for the Multnomah Falls and Wahkeena Falls Loop, a moderate hike that encompasses the soaring Multnomah Falls, the rapids and smaller falls of Multnomah Creek, and the toppling Wahkeena Creek. Later that afternoon, we'll wander throughout the Portland Japanese

Gardens where we'll find fresh greenery and subtle blossoms of azalea, camellia and wisteria flowers. Finally we'll capture the sun falling over Mount Hood as we look out from Jonsrud Viewpoint which offers stunning views of not only the mountain but also Sandy River Valley.

The Oregon photo adventure will conclude at Cedar Creek Grist Mill, a historic landmark over 100 years old that still churns out flour, corn meal, and even apple cider. Sign up today to visit Oregon and expand your photo taking skills with the Mentor Series team.

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\$1,250 includes in-the-field instruction, national park fees and permits, presentations, digital reviews, entrance fees, snacks and water on the bus, and transportation to each shooting location.



(clockwise from far left: © Daniel Cheong, © Gary Weathers, © Cooper Atkinson, © Bruce C. Lee (Alter Image Photography))

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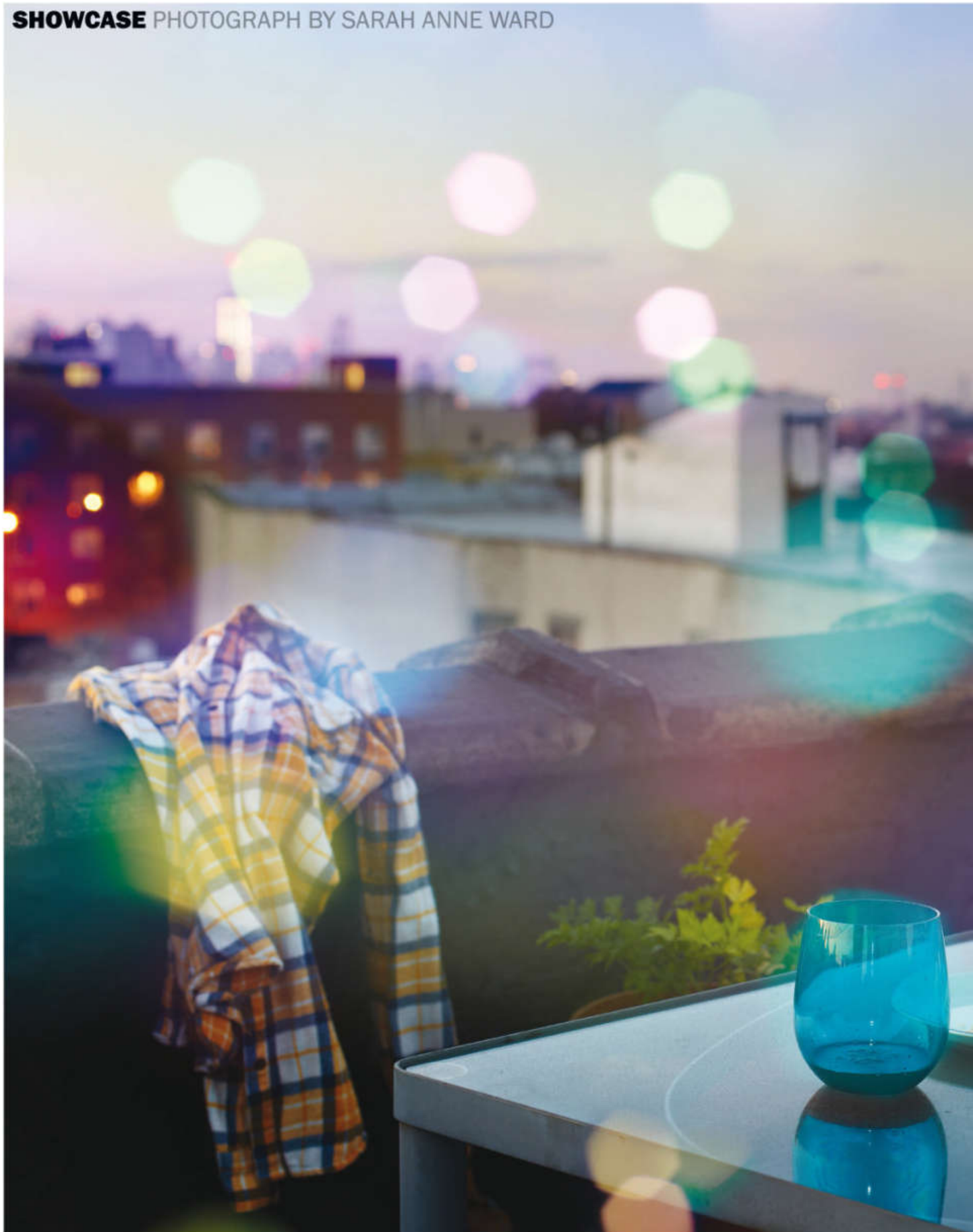
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SHOWCASE PHOTOGRAPH BY SARAH ANNE WARD



SARAH ANNE WARD



BUBBLE TRICK

On a rooftop in Brooklyn Heights, pro Sarah Anne Ward captured the bohemian romance as a New York afternoon faded to dusk. And she did it with the most unlikely of tools: two plastic bubble guns she'd bought in Chinatown for \$5 each. As the bubbles emerged from their barrels, the guns illuminated each in a variety of colors. Since the guns were deployed close to the lens, the bubbles fell out of focus, suggesting lights from the darkening city. She shot with a tripod-mounted Canon EOS 5D Mark II and 50mm f/2.5 Canon EF macro lens, with an exposure of 0.3 sec at f/5.6, ISO 100; this image is a composite of three shots. "When I lived in Brooklyn, I spent many nights working on the roof as the sun went down," Ward says. "The contrast between the colorful city in the distance and the gray rooftop was my inspiration."

NEXT

THE HOTTEST NEW STUFF AND THE TECH TRENDS BEHIND IT

JUST OUT

NEW IDEAS

Airborne Optics ▶

DJI ZENMUSE X5

Quadcopter-maker DJI takes off into new territory with its own Micro Four Thirds camera. Compatible with lenses in that mount, it shoots 16MP stills and 4K video and it integrates into DJI's drone chassis through the included gimbal. Control focus and position via the DJI GO app.

\$1,699, street, body only; dji.com

DRONE
READY

Bright Idea ▶

KINO-FLO DIVA-LITE 415 UNIVERSAL

A favorite among pro still and video shooters, this studio fluorescent delivers continuous lighting in either 3200 K tungsten or 5500 K for daylight. This updated model offers a dimmer that works on and off-unit via remote control. **\$1,280, street; kinoflo.com**

TWO-
TEMP
LIGHT

Heavy Hitter ▶

LEICA S (TYP 007)

Building upon its predecessor, the Typ 006, Leica's flagship medium-format DSLR ups the burst rate to 3.5 fps and extends the sensitivity range to ISO 200–6400. While the megapixel count holds steady at 37.5, the new model shoots video up to 4K. **\$16,900, street, body only; leica.com**

Low-Light
Sony Cam P.18

Innovative
Olympus P.20

Big RAID
Roundup P.22

◀ Six Up ZEISS MILVUS LINE

Zeiss's Milvus line for Canon and Nikon DSLRs is launching with six manual focus primes: 21mm f/2.8, 35mm f/2, 50mm f/1.4, 50mm f/2 macro, 85mm f/1.4, and 100mm f/2 macro. The updated metal construction sports smooth rubber on the barrel. And while most of the optical formulas have been carried over from other Zeiss lenses, both the 50mm (shown) and 85mm have reengineered optics. **\$1,117–\$1,843, street; zeiss.com**



FUJIFILM

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DIGITAL CAMERAS



Photo © 2015 Bill Fortney | FUJIFILM X-T1 Camera and XF60mm F2.4 R Macro lens, at 0.3 sec at F/11, ISO 400.

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These two metal-clad full-frame primes in Canon, Nikon, and (soon) Sony A mounts point to a new direction for Tamron, known chiefly for zooms. Both new lenses have Vibration Compensation and promise minimum focusing distances of less than 1 foot. See our image galleries on PopPhoto.com for first impressions and look for full tests soon. **\$599, street, each; tamron-usa.com**



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From \$2,995, street; epson.com



Sensitive Type SONY ALPHA 7S II

Sony's updated ILC brings improved low-light and video capture to its A7 line. In contrast to the super-high-res A7R II tested on page 72, this has a 12MP sensor. But sensitivity expands up to ISO 409,600, there's new image processor technology, autofocus is rated down to -4 EV, and it records full-frame 4K video internally. **\$2,998, street, body only; sony.net**

Max Out

HAHNEMÜHLE FINEART BARYTA SATIN

The venerable art-paper company promises outstanding deep blacks and intense colors in its latest inkjet photo paper. And now in a smoother texture for improved sharpness, this line of Baryta is more versatile than ever.

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F.Y.I.

ZEISS introduced a set of smartphone-based virtual reality goggles, the VR One. Via an app, they put you in the cockpit of a DJI drone and allow you to control the motion of the onboard camera.

EIZO released the color-accurate Flexscan EV2750 displays, ideal for dual-screen editing. With 1mm bezels, these sit side-by-side almost seamlessly.

EYEFI upped its Mobi Pro Wi-Fi SD card to 16GB and now throws in a free year of cloud storage. The card creates Wi-Fi hotspots in the field and uses local networks at home.

GOPRO has unveiled the Odyssey, a circular panoramic rig that uses 16 synced Hero4 Black cameras to produce 360-degree 3D video.

THE LOWDOWN

THE FOLKS over at Instagram have announced that their photo sharing community has grown to more than 400 million users. Drilling down a bit, they note that more than 75 percent of the Instagram community resides outside the United States and that among the most recent 100 million users to join, more than half reside in Europe and Asia. Brazil, Japan, and Indonesia added the most new users.

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NIMBLE SHOOTER



A host of upgrades for a snappy ILC

OLYMPUS'S OM-D line of interchangeable lens compacts continues to evolve with the new OM-D E-M10 Mark II. This \$649 (street) update to the entry-level body keeps the Four Thirds 16.1MP Live MOS sensor and TruPic VII processor, but bursts tick up to 8.5 frames per second with fixed focus and metering, or 4 fps with tracking.

Image stabilization steps up to Olympus's five-axis version from three-axis, using voice coil motors to quickly move the image sensor based on data from nearby gyro

STANDOUT SPECS

SENSOR: 16.1MP Four Thirds Live MOS

SENSITIVITY: ISO 100–25,600

SHUTTER SPEEDS: 1/4000–60 sec; Bulb/Time with selectable exposure up to 90 min

VIEWFINDER: 2.36-million-dot EVF with 100% view and 0.62X magnification

LCD: 3-inch tilting

VIDEO: 4K and HD time-lapse video output

sensors. This sensitivity is especially handy for macro photography, when horizontal and vertical balance is crucial and even the smallest shifts in position can have drastic results.

Both macro and landscape fans will be excited about the new Focus Bracketing system, which takes 3 to 999 frames in quick succession at varying focal depths. These can be combined later to create an image with supernatural depth of field. This feature works only with Micro Four Thirds lenses, not other glass mounted on an adapter, because it uses an internal database to control focusing and the number of shots.

Magnification on the 2.36-million-

dot electronic viewfinder (EVF) climbs to 0.62X from the original E-M10's 0.58X. A new Simulated Optical Viewfinder mode dims highlights and brings up shadows to better mimic what you'd see through an optical finder. Plus, Olympus added its new autofocus targeting, letting you use the touchscreen on the back to move the AF point while you're still looking through the EVF.

Video tops out 1080p and 60 fps, but the E-M10 II can automatically compile a 4K time-lapse of up to 999 frames at 5-sec intervals. Other fun features such as Live Composite are also on hand, along with Wi-Fi for control via app.

—Adam Ryder

TOP CAMERA STORES IN AMERICA

See the list at topcamerastores.com

Nikon Canon SONY Leica FUJIFILM

[pro]master TAMRON SIGMA lowepro Panasonic

OLYMPUS ZEISS Manfrotto thinkTANK photo

*All stores may not carry all listed manufacturers in stock.



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FIRST RAID

BETWEEN NEW high-pixel sensors and 4K video clips, image files aren't getting any smaller. That makes a good hard-drive setup all the more crucial. These RAID arrays put multiple drives in a single device for maximum speed or security. (The ones we picked come in a variety of capacities, so the size you need may cost more or less than the price we've listed.) Look for full reviews on PopPhoto.com.

1 WD MyPassport Pro 2TB, \$250

The Thunderbolt cable that transfers data and powers this portable drive is integrated directly into the housing, so there's no chance of forgetting it when you toss the drive into your camera bag. **HOT:** No need for a power cable thanks to the built-in Thunderbolt. **NOT:** Big for a portable drive, it weighs 1.6 pounds.

2 LaCie Rugged RAID 4TB, \$399 The rubbery orange bumper around an aluminum drive housing has become LaCie's signature look, but it's about more than aesthetics. This portable model spreads 4TB of storage across two drives in an enclosure that's shock-, dust-, and water-resistant. **HOT:** Built-in Thunderbolt cable. **NOT:** Rubber end cap is easy to lose.

3 OWC Mercury Elite Pro Dual 6TB, \$495

This two-drive array comes out of the box in a RAID 0 configuration for optimum speed. You can switch over to RAID 1 easily if you'd rather back up your data twice in a mirrored array. **HOT:** Plug-and-play setup. **NOT:** Fan keeps it cool, but also makes noise.

4 ioSafe 214 NAS RAID 4TB, \$899

This network-attached system can withstand temperatures up to 1,550 degrees F and submersion in up to 10 feet of water, so fire and floods won't destroy your data. **HOT:** Toughest array around. **NOT:** Tank-toughness requires a big, burly enclosure.

5 G-Tech G-Speed Studio XL 24TB, \$2,999

If you need a serious amount of storage, this eight-bay RAID array can go up to 64TB using removable hard drive modules. It connects via Thunderbolt and has two ports so you can daisy-chain devices. **HOT:** Lots of storage and swappable disks. **NOT:** Requires big studio budget.

NOVEMBER CALENDAR HAPPENINGS IN THE WORLD OF PHOTOGRAPHY



1 **Celebrating Photography at the National Gallery of Art: Recent Gifts** (Washington, D.C.) This survey show runs through March 27, 2016.



3 **Lois Greenfield: Moving Still** Chronicle Books presents the past 20 years of images from the master of dance photography.



FotoDC (Washington, D.C.) This annual citywide event packs photography exhibits, projections, lectures, parties, and more.



The National Parks: An American Legacy Pop Photo contributor Ian Shive takes you on a photo tour, published by Earth Aware Editions, of the glories of the national landscape.



Elliott Erwitt, PDNB Gallery (Dallas) This gallery show of classic photos in gelatin silver prints by one of our greatest (and wittiest) living photographers ends Nov. 14.



Miami Street Photography Festival 2015, HistoryMiami The main event is during Art Basel, Dec. 3-6, but HistoryMiami hosts MSPF's contest finalists until Jan. 17.

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ON ASSIGNMENT WITH TOP NIKON PRIMES: 35MM F/1.8G & MICRO 85MM F/3.5G

Pro Tamara Lackey Shoots Awesome Kid Portraits With This Dynamic Optical Duo



Internationally renowned photographer, book author, and speaker Tamara Lackey is acclaimed for her vibrant and authentic lifestyle images—from children's portraits to celebrities—that capture the emotional and visceral presence of her subjects. Her work has appeared in leading magazines, she's been a guest on prime-time TV shows, and she's won awards, both for her creative artistry and her impassioned charity work for children without parents.

A dedicated Nikon shooter and official Nikon Ambassador, Tamara Lackey uses Nikon prime lenses to create most of her outstanding photographs. We asked her about her recent hands-on experience shooting with the exciting Nikon AF-S DX NIKKOR 35mm f/1.8G and AF-S DX Micro NIKKOR 85mm f/3.5G ED VR lenses. Here are her insightful answers:

Q: How would you characterize your overall experience shooting with these two advanced Nikon prime lenses?

Tamara: Both provide extremely fast, precise autofocus, deliver phenomenal image quality, gorgeous bokeh, and a shallow depth of field at wide apertures that lets you achieve beautifully soft backgrounds that focus the viewer's attention on the subject. They're also very lightweight and compact—great when you're jumping around photographing kids in action.

Q: What techniques do you use to capture such playful, natural looking pictures of children?

Tamara: I warm the kids up by playing with them first. Then I hold the camera away from my face to connect with



them, bringing it up at the last instant to take the shot. You also have to be able to capture kids' lightning quick movements and fleeting expressions, so having extremely bright, responsive, quick-focusing lenses like the NIKKOR 35mm f/1.8 and the Micro NIKKOR 85mm f/3.5 is a huge plus.

Q: What Nikon equipment did you use to capture these authentic, heart-warming images?

Tamara: I shot both the NIKKOR 35mm f/1.8 and the Micro NIKKOR 85mm f/3.5 on a Nikon DX-format D3300, a small

and easy to use DSLR camera. Both lenses provide a brilliant viewfinder image, great handling, and let you capture crisp images under practically any shooting conditions thanks to their advanced optical design and amazing AF performance. They're both extremely versatile, able to seamlessly switch to manual focus when needed. The 35mm f/1.8 gives a normal 52.5mm-equivalent focal length on the D3300, close to what the natural eye sees, and the Micro 85mm f/3.5 covers a 127.5mm-equivalent field, and gets down to an amazing 11.3 inches (1:1) perfect

for capturing frame-filling portraits and exquisitely sharp close-up details.

Q: Are there any other things you learned on this shoot?

Tamara: I discovered that the NIKKOR 35mm f/1.8G and Micro NIKKOR 85mm f/3.5G team up to make a brilliant 2-lens outfit because each complements the other perfectly for my kind of work. They're both superb choices for anyone from emerging enthusiasts to working pros that demands professional grade performance in a handy, lightweight form factor.

KEY SPECS

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- Rounded 7-Blade Diaphragm

AF-S DX Micro NIKKOR 85mm f/3.5G ED VR

- F Mount/ DX Format
- Apertures: f/3.5-32
- One ED Element
- Silent Wave Motor AF
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- Internal Focus/Manual Override
- Rounded 7-Blade Diaphragm
- Min. Foc. Dist.: 11.2 inches (1:1)



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CONVERSATION, INSPIRATION, CONTESTS, AND YOUR QUESTIONS ANSWERED



MIKE MELLIA (15)

MY PROJECT

REDEFINING SELFIES

**A pro goes formal
with his self-portraits**

MIKE MELLIA takes his selfies seriously. Instead of a smartphone, he uses a Mamiya RZ67 with a Phase One P65+ digital back in a Profoto strobe-lit studio. He wears Brooks Brothers suits or Gucci gowns. His limbs are languid, his

bearded face emotive.

Started in 2014, Mellia's *A Selfie A Day* series is a deadpan take on the divisive form of self-portraiture. Photography itself may have universalized the portrait, once exclusively for the wealthy few, but Mellia believes that smartphones have helped turned

photography into a means of mass communication. In response, he gave the selfie some heft.

Mellia and his assistant take a handful of pictures each session. Wearing high-end couture procured by a stylist, he strikes poses often culled from Renaissance or Baroque portraits, and perfects the look with



Mike Mellia
This New York pro shoots for a variety of brands and his art exhibits have traveled the U.S. and Europe.



KEEPING IT CLASSY

Mellia's selfies mix classic portraiture, high-end fashion photography, and discordant captions claiming he's played backgammon in a Mongolian warehouse or watched shadows at Stonehenge.

modeling and lighting tricks he's learned as a fashion photographer.

His effort is part of the gag, giving his photos history and familiarity—which clash with outrageously casual captions such as “That one time an affluent divorcée invited me to clean her pool.” He is simultaneously himself and a character, and creating new personalities is his biggest

challenge. “You have to present yourself how you want people to see you and it could be anything,” he says. “Social media platforms are causing people to advertise themselves in some way that may or may not be true.”

A *Selfie A Day* is sweet and silly, critical and concerned. Those contradictions embolden Mellia, who now includes his infant

daughter in the project. “Maybe this has something to do with having the baby, but it feels a lot lighter,” he says of the project's next phase.

“I’m starting to take more pictures outside, in different environments. It’s more of this airy feeling of being in different places instead of strictly studio work.” That requires more work, but it’s worth it for a great selfie. —Jon Blistein

FOR DOGS' SAKE



You can change the world with your camera

I AM OFTEN asked why I choose to photograph animals. The simple answer, as well as the assumption often made, is that I like animals better than people. Technically I guess I do; I am more relaxed around animals and therefore find their company preferable. People are complicated whereas animals are brilliantly simple. They are also remarkably trusting despite the fact that we continually prove ourselves to be utterly undeserving of their trust.

Since childhood, I aspired to be a champion of animals but was never certain what form it might take. In 2005, I was volunteering in a local shelter and as more and more responsibility fell to me, the reality of what was happening there sunk in. Dogs were dying by the dozens because of their

breed, because there weren't enough homes for them, because they were left behind, because of us. Always because of us. It was unbearable and it was happening every day at thousands of other shelters around the country.

Quite often I was powerless to save those dogs' lives, so I longed to use photography to do something that might help save future lives. I got that chance with my first book, *Shelter Dogs*, and from there it seemed that people were willing to listen to me, so I kept speaking through imagery about the modern plight of animals around the world.

My second book, *Street Dogs*, was a thoroughly pure effort: I traveled for months with animal rescuers documenting street dogs in Mexico and Puerto Rico. I spent most nights reliving the cruelty and neglect that I had witnessed that day. Through the grief and the struggle, I managed to make

A STORY FROM FINDING HOME
Roman, a sweet pit bull/Weimaraner mix, was given to a shelter at 6 months old and quickly adopted by a new family, who renamed him Bear.



Traer Scott

This Providence, R.I.-based fine-art and commercial photographer is the author of six books, including *Finding Home: Shelter Dogs and Their Stories* (Princeton Architectural Press, 2015).

the first collection of work on the subject. The book brought much-needed media attention to the abhorrent animal welfare situation in Puerto Rico.

Now, many years later, I have made *Finding Home: Shelter Dogs and Their Stories* (Princeton Architectural Press, 2015). It is in the same spirit as the first book, but my voice and my skills as an artist have matured. I am able to tell a much more coherent story now. In *Finding Home*, I was able to approach the subjects from a place of objectivity. While in my earlier books the dogs' lives often literally depended on my images and daily involvement, this time I was just a documentarian. I could also follow many of these dogs and tell readers much more about their lives at the shelter and beyond. Hopefully people are still listening.

If there is one thing that I want people to take away from my work, it is the idea that one person can make a difference—but not always in the way you might think. As photographers, we possess one of the most potent and powerful tools in existence. Never in history has so much of our world been documented and sweepingly examined, but I feel that it is often the small scale, the one-on-one impact, that is now overlooked.

I try to remember that long before my books came out, I was making a difference in individual lives at that shelter. A huge difference was made in the quality of life of each and every dog that I exercised or posted photos of. That is why I still volunteer as a shelter photographer, so that I don't forget the fact that this greater cause is composed of millions of individual faces and souls.

—Traer Scott



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Introducing URSA Mini, a handheld Super 35 digital film camera with an incredible 4.6K image sensor, global shutter and a massive 15 stops of dynamic range! The super compact and lightweight design is perfectly balanced, making it comfortable enough for all day shooting. URSA Mini lets you shoot at up to 60fps, features a 5" foldout viewfinder, dual RAW and ProRes recorders, and more!

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Lightweight and Portable

URSA Mini's perfectly balanced body is made out of space aged magnesium alloys so it's rugged, yet lightweight and comfortable enough to be used all day. You get a super bright 5" fold out touch screen for on-set monitoring, that can also display overlays for timecode, histograms, audio meters, focus peaking and more! URSA Mini features full size, professional connectors, even 12G-SDI, so you don't need custom cables, plus high quality stereo microphones and a side grip mounted on a standard rosette.

Completely Customizable

Blackmagic URSA Mini is completely customizable so you can create a rig that's built specifically for your production! Add accessories like the Blackmagic URSA Viewfinder and Blackmagic URSA Mini Shoulder Kit, or choose from hundreds of third party accessories. URSA Mini has 9 standard 1/4" threaded mounting points on the top and bottom of the camera so you can mount it directly to a tripod as well as add accessories such as rails, matte boxes and more.

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You never have to stop recording because URSA Mini features two CFast 2.0 recorders! When one card is full, recording automatically continues onto the next. URSA Mini uses the latest, incredibly fast CFast 2.0 technology for recording speeds up to 350 MB/s. Wide dynamic range images are saved as 12-bit RAW files, which are perfect for high end grading and effects work, or as broadcast quality ProRes, for easy post production workflows with minimum storage requirements!



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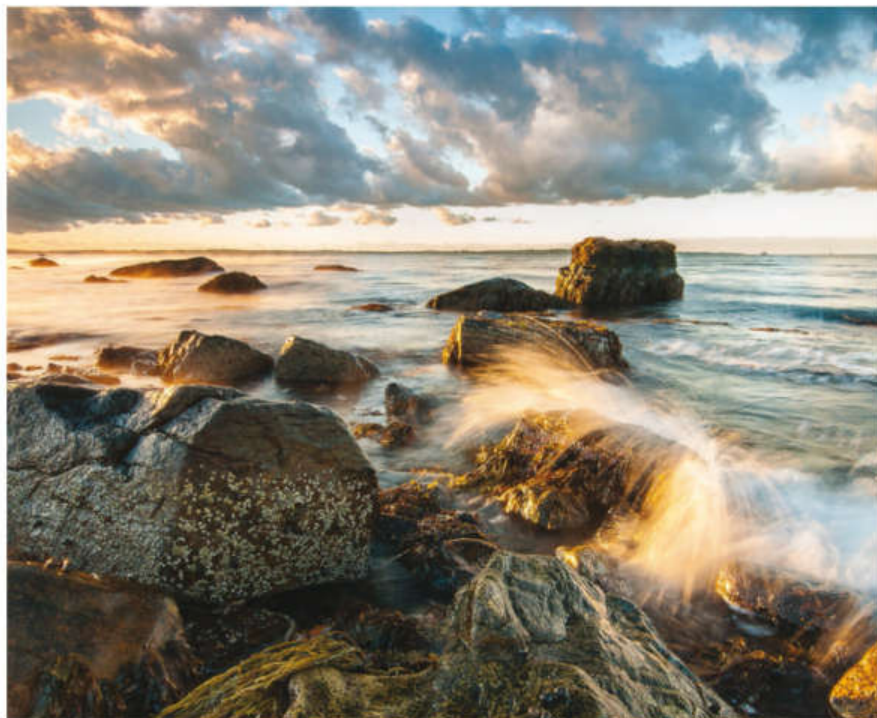
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SHARE PHOTO CHALLENGE BEACHES



JUSTIN COLEMAN

TO THE POINT

A rocky shoreline takes the beach challenge prize

TECHNICAL WRITER and photo enthusiast Justin Coleman has been photographing for nearly seven years, but this beautiful shot took much more than pure technical skill. Captured on the rocky shores of Bluff Point, a broad peninsula in Groton, Connecticut, that reaches outward toward Long Island Sound, this photogenic gem can be reached only by a 1.5-mile hike. When aiming to shoot the beautiful golden hours of dawn, trekking through the woods can be even more challenging, but “the reward is a scenic expanse of the Connecticut coast which feels exceptionally remote,” says Coleman.

Once he emerged from the forest, Coleman found that his destination had been discovered already by a group of hikers. Since they were perched on the boulders lining the beachfront, Coleman had to rethink his composition entirely to eliminate the distractions from the shot and retain its sense of remove. “I turned my camera

towards the open water and began timing my exposures to catch breaking waves as they were illuminated by the rising sun,” he said.

To achieve the perspective in this photo, Coleman set up his tripod low to the ground and as close to the breaking waves as possible. While this put his gear at risk, it was the only way to create the balance he wanted between the boulders in the foreground and the clouds in the sky above.

A circular polarizing filter fitted to his 10–24mm f/3.5–4.5G AF-S DX Nikkor ED lens allowed him to control the glare on the wet rocks, while a graduated neutral-density filter, used at the same time, tamed the brightness from the clouds. The exposure on his tripod-mounted Nikon D5000: 1/2 sec at f/14 and ISO 200.

—Sara Cravatts

NEXT PHOTO CHALLENGE

Our film story on page 66 proves the medium is still alive and well. Send us your best new photograph (not an ancient one from your closet) shot with film by November 30, and you could earn \$100 and your story here. Read the rules at PopPhoto.com/contests.



JOEL SOTO (2)

AWASH IN COLOR “To make the swimmers stand out, I positioned myself low and close to the water,” says Joel Soto. “I never stop shooting until I get the picture I sense is in a scene.”

BEAUTY BATH

Where wind and water meet fire, ice, and stone

EXPERIENCING NEW cultures, architecture, and wildlife gets many travel photographers going. But for Joel Soto of Highland, Indiana, travel offers a single allure: landscapes. His July 2015 trip to Iceland and Greenland with *Popular Photography*'s Mentor Series, which introduced Soto to Iceland's Blue Lagoon geothermal spa (above), afforded him plenty.

Every day and every destination on these Nordic islands proved an awesome photographic experience for this retired steelworker. “From standing in a lava field amid dozens of steam-venting geysers to climbing up the side of a volcanic crater to experience 360-degrees of incredible views around its upper rim,” he says, “the trek in its entirety was a blast.” His particular favorite: A boat excursion among brilliantly blue, calved icebergs that floated out to sea like abstract sculptures leaving an art museum.

“The scene really brought home to me why I'm drawn to landscape photography,” he says. “I do it because I'm inspired by what happens in nature without the help or hindrance of people.” He recalls,

“In Iceland, I was particularly impressed by what wind and water do to lava rock and stone. It was a wonder to behold and I hated leaving.”

Besides amazing landscape photos, Soto took home a camera bag full of tips from this and his other three Mentor Series outings. He now, for example, carries two DSLR bodies, one with a wide-angle and the other with a telephoto lens attached. “I used the wide-angle for the Blue Lagoon shot because I thought it could capture what I found fascinating about the scene: the broad expanses of clean bright color,” he remembers. Having a wide-angle at the ready also let him quickly nab the three foreground swimmers as they turned to look in his direction.

As a landscape photographer, Soto takes every precaution to respect the places he's been fortunate enough to visit. “I take pictures and leave footprints. Nothing else,” he says.

—Peter Kolonia



Joel Soto

This photo enthusiast hopes to capture landscapes in Japan, Russia, Costa Rica, and Ireland on future treks.

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COVER LETTERS

I like the new covers with photos on them to draw me in to your magazine. I read *Popular Photography* to learn how to take better photos. I also know that you do great camera tests, but not having a camera on cover every month is a good change.

Brian Black
Paducah, KY

I APPLAUD your approach to bring the subject to the mag cover over the tool. As a professional I like seeing new equipment and their appraisals. But it's a dud every time I see them on the cover. When I see great photos on it, I'm drawn to it and want to see more! I like your style!

Gene King
via PopPhoto.com

YOUR READERS all have our existing gear and we are curious about new releases, but most readers will go months if not years before making any substantial change in our gear. The one thing we always should be working on is technique and looking for new approaches, and that is why I like your idea of "emphasizing techniques over gear." Keep up the great work.

Steve Brinkmann
Fairfax Station, VA

I LOVE the idea of technique over gear. I have the gear and want more technique, inspiration, and photo ideas so I can use the gear well.

Mary Ann G Neuman
Croton-on-Hudson, NY

JUST READING through the August issue, and I always read the Editor's Letter. What sets a "great" magazine apart from just a "good" one is what that magazine offers that none other does. Personally speaking, I am far more interested in reading about

innovative techniques than reading the same hardware reviews that everyone else is providing. Look, don't get me wrong; gear porn is great, but anyone can regurgitate specs.

Laurence M. Schwarz
Edmonds, WA

THE MORE gear, the better, as far as I am concerned. Cameras represent a much greater accomplishment than what people then do with them. Sort of like motorcars.

Ted Clarke
Winnipeg, Manitoba, Canada

I'D LIKE to be part of an experiment: those who'd rather get the camera cover as a subscriber! I am far more interested in new equipment than I am on catching a wave! Several times a year I see the latest issue at the store with an exciting camera on the cover, wondering where my copy of that issue is, only to discover I just got it with a portrait on the front, not realizing that camera is back on page 60 something! How about alternating months, and making only one cover? Probably cheaper and everyone gets at least half of their wishes!

Don Winn
Portland, OR

EDITOR'S NOTE: Our newsstand cover test is over, but it will be a few months before we have a full analysis. Camera or technique? Now that we've heard from you, we'll see what the market says.

IN JULY (Your Turn), David Del Rio suggests using an opaque 35mm film canister to diffuse flash. I think a translucent canister would more likely diffuse the flash than an opaque one. I've used this trick for over 10 years—works OK but cuts the light for photos other than close ups.

Bill Brandt
Cheshire, CT

YOUR AUGUST issue has a letter from a reader about your use of the word "bokeh." You said it's from the Japanese word for "fuzziness" or "dizziness." Why use a Japanese word that the vast majority of

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FROM FACEBOOK

OUR VIDEO on Canon's camera that goes to ISO 4,000,000 got a big response. A few comments:

Great! Now Canon just needs to transfer some of that tech into its professional level DSLRs...and soon I hope!!
—Tom Bingham

Grain would graduate to rocks and noise would promote to sonic.

—Kent McIntire

I feel like this could have military applications...but aside from that, I can't think of any photography job in the civilian world where this would be close to necessary.
—Paul Burrows

people would not know? My Japanese wife of 48 years, as well as all of her English-Japanese and Japanese-English dictionaries, do not have the word "bokeh." The correct word is *boyakeru*, defined as "become dim, blurred, fade."

John Schaefer
Glendale, AZ

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CHILD'S PLAY

This month your pictures of kids caught our eye

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3rd Place \$100 Prize

**MARK EDGECOMBE,
37, UPS DRIVER,
PLYMOUTH, UNITED
KINGDOM**

Mark Edgecombe was roaming the corn maze at Darts Farm in Devon, England, with his daughter Scarlett when he noticed the opportunity for a fantastic photo could be right around the corner. "I knew the maze would make a great shot, and my kids always inspire me to take shots," he says. Using only the natural light streaming through a slightly cloudy sky, Edgecombe snapped several quick frames of Scarlett on the move. After choosing his favorite photo, capturing the movement of his daughter's dress, he made adjustments to clarity and contrast in Adobe Photoshop Lightroom.

TECH INFO:

Canon EOS 5D Mark II with 70–200mm f/2.8L Canon EF lens; 1/3200 sec at f/2.8, ISO 100. Minor adjustments in Lightroom.



2nd Place \$200 Prize ▲

TIMOTHY PELCZYNSKI, 75, RETIREE, STERLING, VIRGINIA Spending some quality time with his great-niece Ainsley, Timothy Pelczynski couldn't resist photographing her obvious joy. The shot was completely unposed, but he was able to catch the perfect candid moment as Ainsley sat at the top of the slide with a carefree look on her face. The natural and unplanned shot paid off, capturing childhood during a simple family outing. Pelczynski adjusted vibrance in Lightroom and made tweaks to sharpness in Photoshop to finish off the image. **TECH INFO:** Canon EOS-1D X with a Canon 70–200mm f/2.8L Canon EF IS II USM lens and 1.4X EF extender; 1/640 sec at f/8, ISO 1250. Minor adjustments in Lightroom CC and Photoshop CC.

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VEO 235AB

SHARE YOUR BEST SHOT

1st Place \$300 Prize

**KIMBERLY WALLA, 34, PHOTOGRAPHER,
EDMOND, OKLAHOMA**

To celebrate her son turning seven, Kimberly Walla, a lifestyle, family, and newborn photographer, began a photo series based on him. Though Walla set up in her bedroom, where the natural light streaming in was perfect for a portrait, the shot itself was spontaneous. To capture the spirit of her young son, she wanted her images to be filled with action and light. She kept her shutter speed around 1/500 sec to avoid motion blur, and after a few posed shots she let her son start having some real fun on the shoot. "I started shooting some images of my son on the bed and he came up with this idea, which ended up being my favorite," she says. She finished up the shot by converting to black-and-white and tweaking shadows and sharpness using Lightroom 5 and Photoshop CC.

TECH INFO: Nikon D700 with 35mm f/1.4G AF-S FX Nikkor lens; 1/500 sec at f/2, ISO 1600.





3 Reasons

WHY PHOTOGRAPHY IS HARDER TODAY, AND MORE FUN, THAN IT'S EVER BEEN AT ANY TIME IN HISTORY.

HERE ARE A FEW REASONS WHY



1 THAT LITTLE SCREEN CAN WORK AGAINST YOU

While it's awesome to see what you just took, your problems today start when you press the menu button. Now you see screen after screen of confusing controls and names that don't make sense. Quite honestly, on any given make and model, I only use about 30 percent of those controls and I'm not 100 percent sure that even the folks at the camera manufacturers could tell you what they all even do. If they can't, what chance do we have?

2 WE HAVE TO POST PROCESS OUR IMAGES OURSELVES

I used to hand my rolls of film to a guy at a lab and he took care of everything. I used to try different guys at different labs to see who did the best job at processing my film. Today, I process my own film in Lightroom and Photoshop. The time that I used to spend shooting is now spent sitting behind my computer.

3 THE COMPETITION IS BRUTAL

Everybody's a photographer these days. Everybody! And the problem is you can see great images absolutely everywhere. It's not just a handful of people who can make great-looking images these days. It's a flood of people. I had someone ask me recently why it's so hard to get photo credentials to shoot a pro football game or a major league game. I told them it's strictly supply and demand.

There was a time only a handful of photographers had the skills and equipment to shoot pro sports. Today, if a pro team held an open call for photographers to shoot this season, the line would stretch out the door and around the corner. How many wedding photographers are there out there today? If you throw a rock, you'll hear a photographer yell back "Hey, that almost hit the maid of honor!"

NONE OF THIS SOUNDS LIKE FUN. WHERE'S THE FUN PART?

While it may be the hardest time to be a photographer, I think it's absolutely the best time for some of the very same reasons.

1 THAT LITTLE SCREEN CAN WORK FOR YOU

Knowing which 30 percent of those menu commands to use can get you to a place where your camera is set up for success in your style of shooting. It's a place where all that technology fades away so you can just focus on the creativity, composition and capturing the moment. I know how important all this stuff is and I spend a ton of my time teaching photographers which menus matter, which you can ignore, and which ones really make a difference.

2 WE GET TO PROCESS OUR OWN IMAGES

Okay, I'll be straight with you. Lightroom is kind of complicated. Photoshop is just plain hard. But is there anybody out there that can make these two so easy that you become an absolute shark at both really quickly? You bet. But it's not just one guy. It's the same handpicked team that founded the National Association of Photoshop Professionals. They're masters at making the impossible easy. The guy who leads this team (it's me by the way) has dedicated his life to making Lightroom and Photoshop understandable and fun for everyone. If you're struggling with either one of those, I know we can help.

3 THE COMPETITION DRIVES US ALL TO MAKE BETTER IMAGES

Competition drives us all, and there are two things that are going to make you better and give you the edge: lots of practice and great education. You need both. You don't need

new gear. You can make amazing images with whatever gear you already have. You just need someone you trust to show you how to do it. Think about it. If somebody told you, straight up, one-to-one, just like they'd tell a friend, exactly what buttons to push, exactly which slider to move – and gave you the inspiration, business advice and proven techniques – tell me that wouldn't make you better in a hurry.

I really believe that's all that stands between you and making the kind of images you've always dreamed about. Each year, tens of thousands of photographers who are having the same struggles and same challenges you are come to my team and me and we help them with all of this. The shooting. How to use their gear. How to learn lighting. How to master Lightroom and Photoshop. How to get the type of images that you know, you absolutely know, are inside you.

You just need a great team behind you, so go ahead and do this. I've got an online course at kelbyone.com (that's my online education community for photographers). I want you to take it for free. On me. It's about composition and it's not the same stuff you've read in all the books. I promise you, it will change the way you shoot from here on out. I know it will, because I've heard from photographers all over the world that have told me that exact same thing.

You can register for the free course at kelbyone.com/composition. The course is called, "Crush the Composition with Scott Kelby," and the offer expires January 15, 2016. After you watch that one class, you'll get us because you'll know right then we're speaking your language. We get you. We can propel you, inspire you, and help you start making the best images you've ever taken. Period. Come see my team and me at kelbyone.com. Let's start working hard and having some fun together.



GRAB LIFE BY THE CAMERA.

A picture is just a picture. Until it's not. Because a picture can reach a point where it's worth more than any number of words. It doesn't matter how you try to describe it. You can talk all you want. At the end of the day, some pictures are just meant to leave you speechless. Take those pictures. Fuel your creativity.

HOW

**Alter a scene
in a snap P.42**

**Capture the best
of Seattle P.43**

**Master ring-light
portraits P.48**

EXPERT TIPS AND TECHNIQUES FOR BETTER PHOTOS

YOU CAN DO IT

TOP DROPS

Reflect your subject in hundreds of droplets

LIKE MOST committed shooters, Dustin Snipes, a sports and portrait pro based in Los Angeles, dreams of photography 24/7. As a result, he's accumulated a warehouse of photo project ideas in his head, many of

which might never see the light of day. Luckily, this one did. "I had the idea about a year before I actually scheduled the shoot," remembers Snipes. "My problem was that I didn't have the right model. Then



DUSTIN SNIPES (2)

one day my friend Steven Barry mentioned that he wanted to swim the English Channel.” The remark brought this project “out of storage.”

If you’d like to try something similar, you don’t need a marathon swimmer—or even a human model. Any subject, even a single flower, will suffice. Once you’ve settled on what to photograph, gather the gear, just as Snipes did: Get a pane of transparent Plexiglas (and the means to suspend it over your subject), a spray bottle, ladder, water repellant for glass (such as Rain-X) and, if you’re shooting indoors, something with which to

light your subject. You may also need a ladder to position yourself high enough above your subject.

“Almost any camera and macro lens will do,” Snipes says. But it helps to choose the best focal length for your subject: Portraits need a 50mm or 60mm macro, while small objects do better with a longer macro lens (up to 200mm, depending on subject size). Your photo will also be more engaging if you add color to your background as Snipes did with the blue seamless here.

—Peter Kolonia

Step 1

Find your subject. Snipes worked with a distance-swimmer as his model, playing to the thematic concept of the water droplets. Whether you go with a person or an object, it should be small enough to be contained within the beaded water droplets. For added color interest, pick a background hue that contrasts with your subject’s coloring.

Step 2

Build your set. Roll out the background paper, then determine what you will use to suspend the Plexiglas. Snipes used cardboard boxes and paint cans to achieve the right height. Place the ladder so that you can shoot down onto your subject. And finally, set your lights so they don’t reflect off the Plexiglas surface.

TECH DATA

Snipes exposed for 1/250 sec at f/6.3, ISO 100. For more of his sports and portrait photography visit dustin.snipes.com.

Step 3

Prepare the Plexiglas. Snipes applied a coat of Rain-X, a water repellent sold in hardware and auto supply stores, to the Plexi to make the water from his spray bottle bead up. Put the coated pane into position, and, using a bubble level, make sure it’s parallel to the floor—otherwise the beaded water will run off. Finally, spray on the water.

Step 4

Make a few test shots. In a process of trial and error, it can take a few attempts to find the right distance between the subject, Plexiglas, and camera. Your subject should be out of focus enough to avoid competing with its sharp reflections in the water droplets, but not so soft as to be unrecognizable. Set a relatively small aperture. Once you’ve nailed these variables, you’re ready to shoot.

Final Step

Apply fixes in postproduction. “I added a basic color correction and flipped the image because I’d shot with the top of the subject’s head aimed toward the bottom of my frame,” says Snipes. “This let me set the ladder above his head and not straddling his body.”

THE GEAR

1 NIKON D4S

Snipes says you can use almost any DSLR for which you have a sharp macro lens. He used the Nikon D2Xs. (Current equivalent is the D4s, shown here). \$5,997, street

2 NIKON 60MM F/2.8G AF-S MICRO NIKKOR

“Choose a wider macro lens like my 60mm for larger subjects,” says Snipes. \$597, street

3 BRONCOLOR SIROS 400 S STROBES

The photographer placed his strobes so that the main light lit the subject’s face, and the second strobe served as a fill. \$1,429, street





VITALI HANTSEVICH

COW CUT

Content Aware Fill overhauls a scene

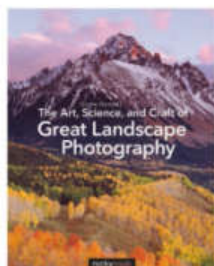
IF THE NAME Vitali Hantsevich sounds familiar, it's because the work of this engineer from Chicago has won our Photo Challenge. Now, he's taking us to a picturesque pasture below Scotland's Stirling Castle. I liked the scene, but felt it was both too busy and too processed.

I started with the RAW file, opening it in Adobe Camera RAW and addressing its cool color cast. With the Cloudy preset as my white balance, I warmed up the scene, giving it more life. Still in ACR, I dialed up the exposure (+0.70), contrast (+46), and shadows (+38), before adding detail to the highlights (-75) and whites (-36). This may sound like a lot of fussing, but it brought out more of the scene's dynamic range without changing the look. I saved the file and opened it in Adobe Photoshop CS6, where cropping into the image gave it more focus.



Then, I did something that no documentary photographer should do: To simplify the composition, I extracted two of the cows. Both of them were grazing with their heads barely visible in the shot. If the photographer had caught them at a different moment, they might not have seemed extraneous, but without their faces they detracted from the scene. This kind of alteration affects not just the facts of the picture but the meaning, too: A single cow comes across as more isolated and lonely than one with friends nearby.

FIELD VIEW Hantsevich captured this scene with a Nikon D7100 and 10-24mm f/3.5-4.5G AFS Nikkor DX lens. Exposure: 1/500 sec at f/9, ISO 400.



BY THE BOOK THE ART, SCIENCE, AND CRAFT OF GREAT LANDSCAPE PHOTOGRAPHY by Glenn Randall (Rocky Nook, 2015)

For photographers who want to learn the science behind landscape photography, this book dives deep. Randall covers (among many other topics) the relationship between our visual systems and contrasty scenes, atmospheric optics, and secrets for predicting rainbows. He suggests shooting those with an 80mm lens and polarizer. Why? The angle of view of that lens is narrow enough to let you use the polarizer to enhance the entire visible segment of the rainbow.

ESSENTIALS LIGHTROOM PRESETS

If you use Adobe Photoshop Lightroom, try presets—groups of settings you can quickly apply to transform your image. Here are some ways to work with them.

Preview them: To see the way a preset will change your image, mouse over the preset name and look in the Navigator window above.

Use the built-ins: Lots of presets are for fun effects, but some are more practical. Look under Lightroom General to find Zeroed—it will take your image to an unprocessed state.

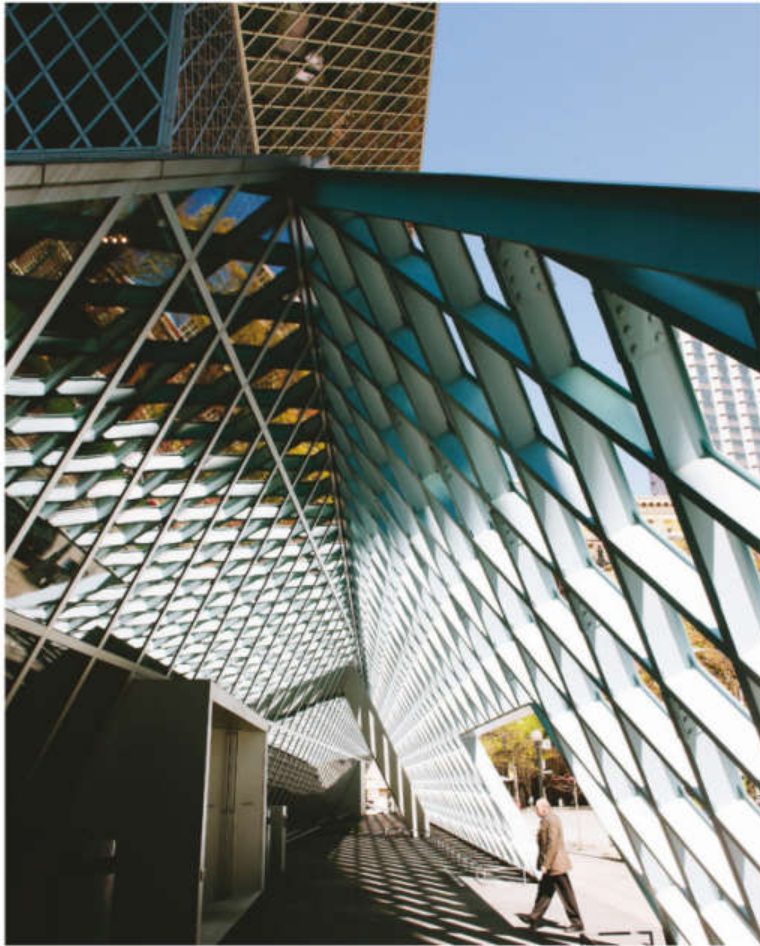
Make your own: Click the plus sign at the top of the Presets panel to save one.

Share yours: To share a preset, right click on the preset and choose Export.

Removing them was easy. Using the Lasso tool, I selected the two headless beasts and applied a Content Aware Fill from the Edit drop down to each. Because the surrounding grassy areas had lots of non-uniform texture, this tool convincingly made the animals disappear. A scene like this, in which your eye doesn't look for clean lines and shapes, makes a perfect candidate for Content Aware Fill.

The whole operation took less than 10 minutes; without removing the cows, it would have taken less than half that time.

—Fiona Gardner



SOAK IN SEATTLE

THE CITY IS FILLED WITH PHOTO-READY DESTINATIONS

CHIHULY GARDEN AND GLASS

305 HARRISON STREET There's nothing like sunlight pouring through Dale Chihuly glass to brighten up your viewfinder. The glass master created this exhibition hall, garden installation, and a conservatory-like glasshouse that includes a 100-foot long glass sculpture suspended 40-feet up. **INFO:** chihulygardenandglass.com

FISHERMEN'S TERMINAL 3919 18TH AVENUE

WEST Home port for the North Pacific fishing fleet for more than a century, this site offers hundreds of colorful boats; it's a great place to wander and shoot as crews prep boats, mend nets, and offload catches. **INFO:** (800) 426-7817

PIKE PLACE MARKET 1ST AVE. & PIKE ST.

Seattle's rain may cast a gray blanket over the city, but this festive marketplace will wake up your eye. A medley of farmers' markets, fish mongers, buskers, craft fairs, and more than 80 restaurants, it's exploding with eye candy. **INFO:** pikeplacemarket.org

SKY VIEW OBSERVATORY COLUMBIA CENTER, 701 5TH AVE.

Take a gander from the highest public observatory west of the Mississippi. Located on the 73rd floor, the observatory is 902 feet above terra firma and offers 360-degree views of the city, Mt. Rainer, the Cascades, while looking down at the Space Needle below you. **INFO:** skyviewobservatory.com

MODERN AGE

Awesome water and architecture views

"SEATTLE'S LANDSCAPE is a giant visual playground," says photographer José Mandojana, who moved there from Los Angeles seven years ago. "You have the Olympic Mountains to the West, the Cascades to the East, volcanoes, Puget Sound, and all of the Sound's islands." In addition to its geographic diversity, he adds, the city also offers a mixed bag of visually interesting neighborhoods, and fantastic architecture.

One fun way to view the city is to hop on the ferry to Bainbridge Island that departs from the downtown ferry terminal. "The ride is roughly

35 minutes each way and you get amazing views of the city and skyline, water, and the mountains as you depart the terminal," says Mandojana. For spectacular lighting, he suggests taking the early morning and sunset runs.

Alki Beach in West Seattle (a 10-minute ride by water taxi) offers another good vantage point for shooting back at the city and the surrounding landscapes. "There is a two-and-a-half-mile walking path with views east towards downtown and west towards the Olympic Peninsula," he says. "It's a big tourist draw and there are people on skateboards, paddle boarders, and volleyball tournaments. It's great for street photography."

ENTRY LEVEL

José Mandojana shot this photo of the Seattle Central Library with a Canon EOS-1Ds Mark III and 24-70mm f/2.8L Canon EF lens at 24mm; 1/250 sec at f/9, ISO 200.

The Queen Anne Hill, north of downtown, perches on Seattle's highest hill. "On a clear day Kerry Park offers great views of downtown with Mount Rainier in the background," Mandojana says. "It's also a great place for capturing twilight views of the city."

For architecture shots, head to Pioneer Square, Seattle's historic district in the southwest corner of today's downtown. Start your trip at the ornate Iron Pergola at 1st Avenue and Yesler Way. From there, says Mandojana, walk south to Occidental Park to find some of the best-preserved Romanesque Revival-style architecture in the country.

Finally, stay fresh with the modern Seattle Central Library (1000 4th Ave.), shown here. Says Mandojana, "It is a perfect marriage of concrete, glass, and geometry."

—Jeff Wignall



MAGIC MAKER

Use Corel's new ParticleShop plugin to add stunning effects to your images

CANADIAN PHOTOGRAPHER and visual artist Renee Robyn has always built Adobe Photoshop brushes from scratch to create her ethereal images. But with Corel's new ParticleShop plugin added to her digital toolbox, Robyn now has far more to play with. ParticleShop "makes it easier and gives me tools that I wouldn't have thought to use. These brush shapes, and the way some of the brushes behave aren't things I would have considered before."

This image was captured on location in the rain. Robyn shot tethered and lit the model with a beauty dish and a reflector; a large white garbage bag protected her gear while serving as a diffuser.

Here's how Robyn used a combination of Photoshop and ParticleShop to create her final, magical image. Note that the new plugin works best with pressure-sensitive tablets and pens and is compatible with Lightroom as well.

—*Theano Nikitas*



THE ART OF FANTASY
Photographer Renee Robyn is known for amazing transformations like the one above. To watch a time lapse recreation of the process in this tutorial, go to PopPhoto.com/particleshop.

QUICK TIP

PARTICLESHOP 1.0 WORKS ONLY WITH 8-BIT IMAGES.

If you're using layers in 16-bit mode, you'll get a warning from Photoshop that you need to flatten and go to 8-bit before using the plugin. To avoid this issue, merge and copy the current layers to a new layer (Cmd + Opt + Shift + E on a Mac or Ctrl + Alt + Shift + E on a PC) before you open ParticleShop. Then go to Image > Mode > 8 Bits and you'll be ready to get started—without losing your layers.

Step 1

Prepare your image in Photoshop. Robyn used the Healing Brush to clean up the water drops from the rain. Then open the ParticleShop plugin. **Go to Filter > Painter > ParticleShop.**

Step 2

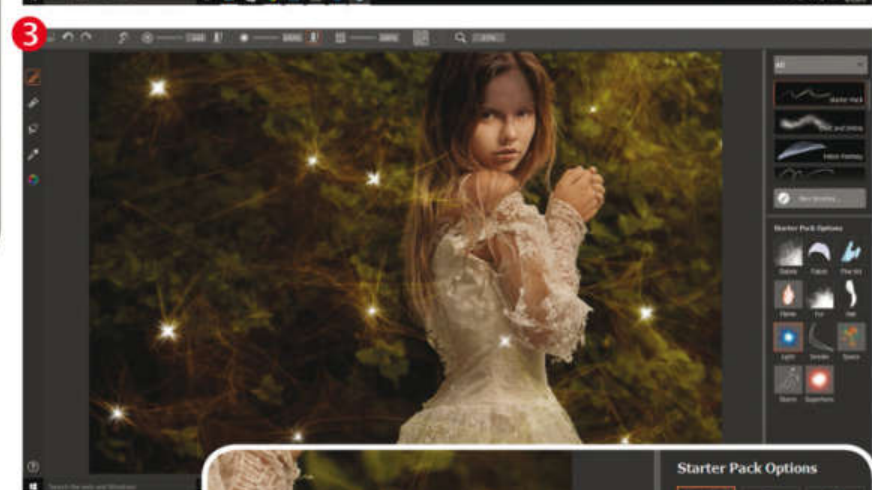
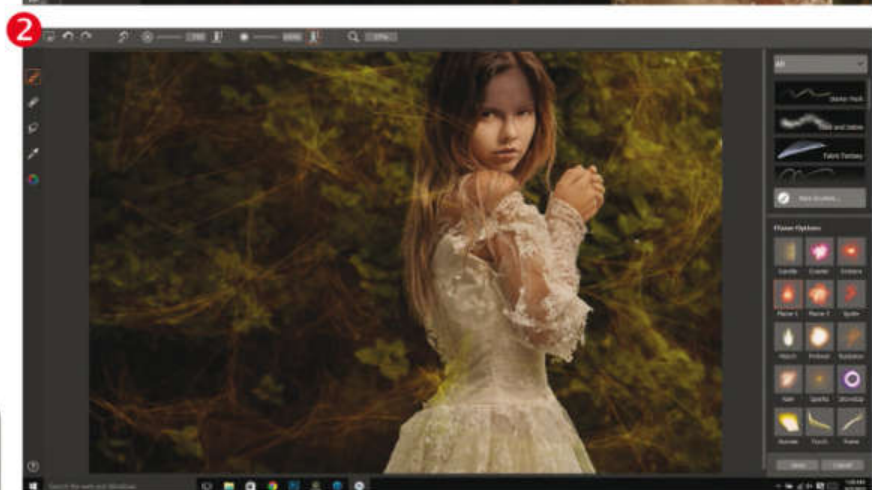
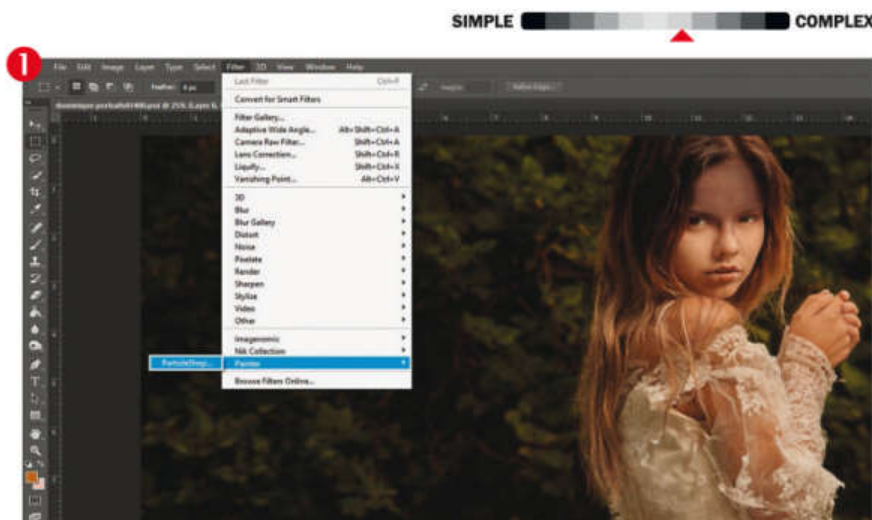
Robyn used the expansion pack of Flame brushes for the initial streaks of light; choose Flame 1 to start (or experiment with one of the included brushes). Adjust the size slider to 750 and opacity to 100%. Click on the Pen icon to the right of opacity to enable pressure sensitivity; a red outline will appear when it's on. Select the brush tool [B]; click on the color wheel or use the eye dropper to choose a color. **For this image, pick a yellow-red tone and draw lines at various pressures to guide the viewer's eye through the image.** Use the Undo button at the top of the window if needed.



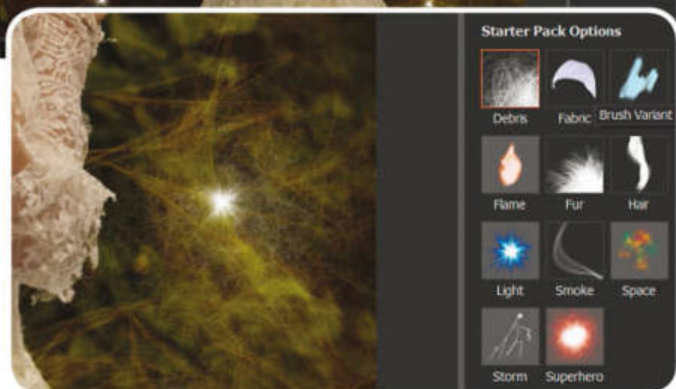
GET BRUSHES ParticleShop includes 11 brushes; you can buy extra brush packs as needed.

Step 3

Now that you've got your fire, add points of light. From the Starter Pack, select the Light brush. Use the color wheel to make it white. **With the brush set to a range of sizes from 100 to 222, place light dots at some of the places where the lines made by the Flame brush intersect.** To soften these new dots of light, choose the Debris brush from the Starter Pack and set it to 750. Draw small circles on the light dots, then click Save to return to Photoshop.



GO FUZZY
Make the magic more realistic by softening the glowing lights.



Step 4

To warm up the image and make it softer, add a layer of yellow.

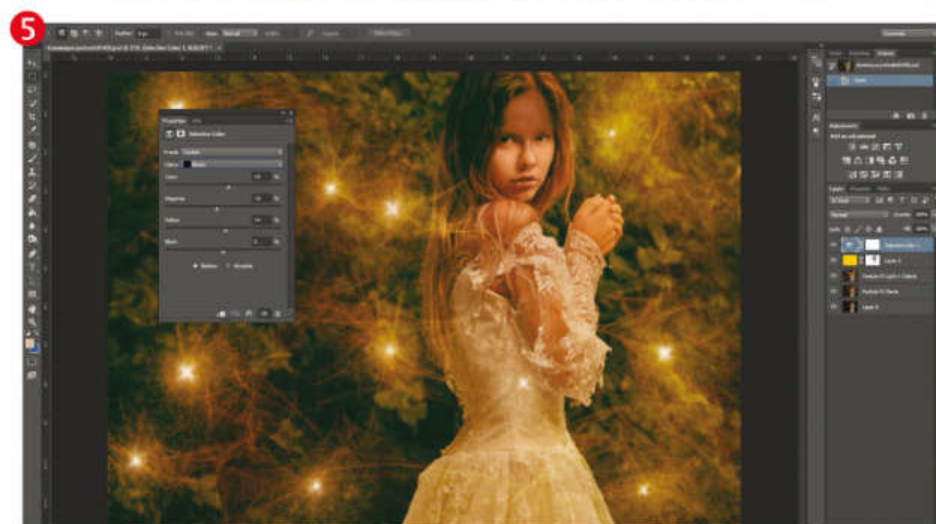
Create a new blank layer by going to Layer > New > Layer. Change the blending mode to Soft Light, click OK, and dial down the new layer's opacity to about 36%. Then choose the Paint Bucket tool from the toolbar (it may be hidden under the Gradient tool). Use the color picker to choose a yellow and click on the image to fill the blank layer. In the Layers panel, click on the Mask icon. Finally, use a black brush to paint out the yellow overlay on the model's face.



Step 5

To reduce contrast and add even more of a fairy-tale look, continue to tweak the color. Go to Layer > New Adjustment Layer > Selective Color and click OK.

In the Properties panel, use the Colors pulldown menu to select Blacks. Set Cyan to 0, Magenta to -11, Yellow to +4, and Blacks to 0. Make sure Relative is selected. Use the visibility toggle to view before and after; adjust as necessary.



Final Step

For the final color adjustment, Robyn added a color LUT preset layer (she loved the way the green looked by adding this layer over the yellow fill layer). **Go to Layer > New Adjustment Layer > Color Lookup and click OK.** In the Properties panel, select 3DLUT File and choose Futuristic Bleak from the pulldown menu. Then add a quick vignette. Create a new merged layer (Cmd + Opt + Shift + E or Ctrl + Alt + Shift + E), set its blending mode to Multiply and its opacity to 70%. Mask out the center to let the corners go dark.



USE A LUT
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FELIX SANCHEZ

HARD TRUTH

Soft isn't always the best choice for portraits

PORTRAIT photographers live and die by their ability to produce a soft light. Whether created using a softbox, diffuser, umbrella, or window, soft is by far the most common flavor of studio lighting. But it doesn't

have to be. Says Felix Sanchez, a Houston-based portrait and food specialist, "Sometimes, I like the intensity of hard light for a [portrait] subject. In those cases, I'll bring out my ring light. It produces great definition in skin and a unique, edgy look that helps my work stand out. I enjoy the creative play."

FURTHER INSPIRATION
For more of Felix Sanchez's editorial and advertising work, visit his website, felixsanchez.com.

Ring lights are either strobe or LED sources that fit around a lens (though they don't have to be used that way), cast a very even light, and come in two sizes. Larger versions—up to a foot across—are suitable for head-and-shoulder or half-length portraits like Sanchez's photo of model Lindsay Phenix, a personal project, shown here. Smaller versions encircle macro lenses and are used for close-up photography of jewelry, fashion accessories, small products, and,

TOOL TIPS

1 PROFOTO PRORING 2 PLUS FLASH HEAD

This ring light is compatible with Profoto's Pro and D4 packs, offers optional reflectors, is fan-cooled, and has a bright 200W modeling light. **\$2,794, street**

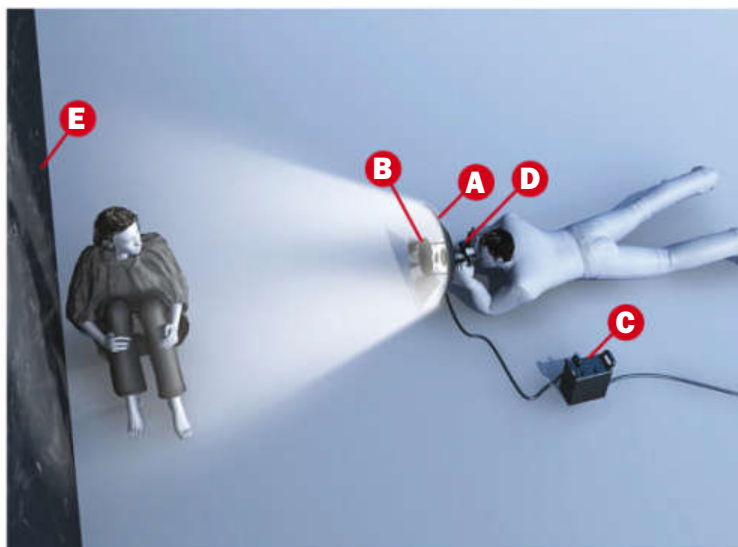
2 PROFOTO PRORING SOFTLIGHT REFLECTOR

Sanchez likes to enlarge the size of his ring light's output by attaching this beauty dish-like accessory. **\$420, street**

3 POCKETWIZARD PLUS III FLASH TRIGGER

This transceiver delivers a long operating range (to 1640 feet), 32 channels, 4 zones, and flash bursts up to 14.5 fps. **\$149, street**

KRIS HOLLAND/MAFIC STUDIOS



For his portrait of fashion model Lindsay Phenix, Felix Sanchez used the Profoto Ringlight Plus flash head (A) on which he mounted the Profoto SoftLight Reflector (B). The reflector enlarged the size of the light source, thereby softening its quality. Sanchez powered the ring light with a Profoto Pro-7A 2400 power pack (C) and shot with a Canon EOS-1Ds Mark II and EF 24-105mm f/4L IS USM lens (D) at 60mm (exposure: 1/160 sec at f/11, ISO 100). He fired the ring light wirelessly using PocketWizard Plus III transceivers, and posed his model against a wall that he had cleverly painted to resemble a chalkboard (E). "Lindsay had very strong, angular features," remembers Sanchez, "and I knew the ring light would be perfect for her. I wanted a very hard-light feel with well-defined edges to her complexion." It turns out, the look he got wasn't quite hard-edged enough. "In post I added more clarity and sharpness to exaggerate the characteristic ring light look even more."

With a ring light, because the light strikes the glasses from all angles—above, below, and from both sides—the rims are completely shadowless.

Ring lights do, however, cast a shadow behind your subject, visible when he or she poses near a wall or sheet of seamless. "I like the shadow that the ring light cast around Phenix here," Sanchez says. "Like a halo or aura, it completely surrounds her in a way that adds something otherworldly to the look." Had he shot against a light-colored background, the halo effect would have been even more intense.

Ring lights have the often-prized ability to create circular catch lights in a portrait subject's eyes. They also tend, as is evident here, to flatten the perspective in a scene.

Placing a ring light off-axis (not around a lens) will let you use it as a relatively shadow-free fill light. "But I prefer shooting through the ring light versus placing it on a light stand, off-camera," says Sanchez. "I also occasionally combine it with other lights, using it either as a main or a fill light, depending on the look I'm after. It's a great light to use on a variety of subjects, and I've had success with athletes, models, CEOs, and artists."

Generally, because of the intensely contrasty quality of ring lighting, it's best used on portrait subjects who have flawless complexions. Unless, of course, you want to exaggerate or emphasize wrinkles, or you're willing to spend many hours of arduous retouching.

—Peter Kolonia

believe it or not, teeth.

(Ring lights were invented for dentists.)

In addition to the hard, high-contrast quality of their illumination, ring lights, when used on-axis (i.e., around the lens), cast no shadow onto your subject. The classic example is a portrait subject wearing heavy-rimmed glasses. When lit conventionally, the rims often cast shadows, usually around the eyes or dropping down toward the cheekbones.



'Tis the Season to deliver stunning photo gifts!



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PRIZE PICTURES

Want to see some of the most arresting images recently made in America? Check out the winners of the 2015 U.S.A. Landscape Photographer of the Year competition. To learn what it took to capture them, we talked to the top shooters in each category. These are their secrets.

By Sara Cravatts

Landscape on the Move

WINNER: Ted Gore, motion graphic designer, Los Angeles, California

Where he was standing: Kalapana lava fields, Big Island, Hawaii

What inspired the shot: During a trip to Hawaii, Ted Gore was moved by the sight of flowing lava. The area is dangerous and

can only be accessed with a guide, but Gore was able to get close enough for a great angle from which to shoot many frames.

Essential gear: Gore could not have captured this without a long lens. He shot with a Tamron SP 70–200mm f/2.8 Di lens (racked out to 200mm) to avoid getting too close. Shooting at night made this fast lens with its big maximum aperture even more pivotal.

How he processed it: After capturing many exposures of both the lava field and sky, Gore used Adobe Photoshop Lightroom CC for initial color, temperature, and exposure adjustments. He then



used Adobe Photoshop CC to combine multiple frames of the land to maximize the depth of field. Finally, he blended the exposures he'd shot of the sky with the images of the lava by brushing on layer masks.

Try it yourself: To capture an image like his, Gore suggests finding a reputable guide to help you and packing a sturdy tripod and a telephoto lens. Use a remote trigger to limit camera shake for long exposures.

Tech info: Tripod-mounted Nikon D600 with a 70–200mm f/2.8 Tamron SP Di lens; 1 sec (lava) and 15 sec (sky) at f/5.6 and f/2.8, respectively, and ISO 200 (lava) and ISO 3200 (sky)



Urban Landscape

WINNER: Don Jacobson, retired glassblower, Portland, Oregon

Where he was standing: Rock of Ages Granite Quarry, near Barre, Vermont

What inspired the shot: Don Jacobson almost didn't get this picture after initially resisting recommendations to photograph at the quarry. When he finally went, he was shocked by the graphic beauty. The rain produced varying shades of grey across the granite, adding interest to the shot.

Essential gear: When Jacobson realized he needed to shoot over a fence, a tripod was out of the question. But his image-stabilized, wide-to-telephoto zoom saved the day. It allowed him to adjust the focal length to appropriately frame his shot.

How he processed it: In Photoshop CS5, Jacobson added one curves layer to increase contrast and another (partially obscured by a gradient mask) to darken the top portion of the image and even out the light of the picture overall.

Try it yourself: Looking to shoot a geometrical photo like Jacobson's? You need to find the appropriate landscape and go prepared. He recommends bringing as many lenses as you can carry and being open to less-than-perfect weather conditions.

Tech info: Nikon D300 with a 18–200mm f/3.5–5.6G AF-S Nikkor DX ED VR II lens; 1/125 sec at f/9, ISO 200



Classic View

WINNER: Paul Leatherbury, geographic information systems specialist, Page, Arizona

Where he was standing: Off I-84 near Hermiston, Oregon

What inspired the shot: En route to Portland, Oregon, Paul Leatherbury stopped outside the town of Hermiston to photograph. Leatherbury says he “was drawn to the wavy nature of the tree trunks.” His angle of view let the trees fill the frame and a short telephoto setting of 85mm accentuated depth.

Essential gear: Because the forest was still, he had the luxury of

a simple setup and time for framing. “I would say what is essential is the photographer’s awareness and patience,” Leatherbury says, “and, of course, a tripod.”

How he processed it: Leatherbury processed his RAW image in Lightroom 4. He made adjustments to contrast and saturation, and reduced the blacks of the image slightly to preserve the soft light that he had witnessed at the scene.

Try it yourself: Leatherbury believes perseverance surpasses technical skill in importance when shooting. “I’ve always sought out the unique light and mood that weather provides,” he says.

Tech Info: Tripod-mounted Canon EOS 5D Mark II with a 28–135mm f/3.5–5.6 IS USM Canon EF lens; 1/125 sec at f/13, ISO 800



My USA

WINNER: Grant Ordelleide, photographer, Denver, Colorado

Where he was standing: South rim of the Grand Canyon between Yavapai Point and Mather Point

What inspired the shot: With a storm approaching, Ordelleide got into position and set up his gear. Since he couldn't predict where it would hit, he did his best to frame the composition and left the rest to Mother Nature.

Essential gear: Ordelleide's shot could not have been made without his Gitzo GT3532LS tripod, a Really Right Stuff BH-55 ballhead, and a Lightning Trigger. That gear made it possible to capture a split-second image.

How he processed it: He converted his RAW file in Lightroom 5, brightening midtones, removing chromatic aberration, and correcting color. In Photoshop CS5, he lightened using curves and added sharpness.

Try it yourself: Learn about lightning safety before you shoot and practice reading weather satellite reports to predict where a storm is moving.

Tech info: Canon EOS 5D Mark III with a 17–40mm f/4L Canon EF USM lens; 1/3 sec at f/4, ISO 640

Black & White

WINNER: Roger Arnall, retired consulting engineer, Melbourne, Australia

Where he was standing: Fifth Avenue at West 56th Street, New York City

What inspired the shot: Arnall was walking around Manhattan when he noticed the reflective, box-like architecture of Trump Tower. Recognizing the potential for a b&w, he positioned himself to capture the perfect angle.

Essential gear: Because Arnall hadn't planned this shot, he carried with him only one 24–70mm lens. This limited his maximum focal length, so he set the lens to 70mm and planned to crop and straighten verticals later.

How he processed it: Arnall converted to black-and-white using Photoshop CS5. He applied several curves layers, each masked to enable zone-specific tonal adjustments or dodging and burning. "I use postprocessing as my paintbrush," he says.

Try it yourself: To avoid some of the barriers Arnall faced, he suggests that you carry the widest range of gear possible. For a photo like this, a tripod and a lens with a longer focal length would have been welcome.

Tech info: Sony Alpha 7R with a 24–70mm f/4 Vario-Tessar T* FE Zeiss lens; 1/125 sec at f/9, ISO 1600





Overall Winner: Youth

WINNER: Timothy Scott Aiken, 20, student at Stanford University, Palo Alto, California

Where he was standing: Diamond Lake, Trinity Alps, California

What inspired the shot: While backpacking with his sister, Aiken wanted to capture the beauty that he woke up to everyday. Seeing his tent atop a rocky knoll gave him an idea, and when his sister entered the frame he knew he had found his shot.

Essential gear: Aiken's 70–200mm telephoto zoom isolated the tent against the massive mountains towering in the background.

How he processed it: After shooting, Aiken did his initial processing in Lightroom 5 with adjustments to curves, levels, and saturation. Next, he used Photoshop CC to sharpen, enhance detail, and dodge and burn. Finally, he added a high-pass filter to keep the image's texture and bring out the details.

Try it yourself: To capture the beauty of nature as seen here, Aiken's one and only suggestion is to get out and explore. Some of the best spots are the most seldom visited; this young photographer drove 6 hours and climbed 5,000 vertical feet to find this natural treasure.

Tech info: Nikon D800 with a 70–200mm f/2.8G AF-S Nikkor FX ED VR II lens; 1/800 sec at f/8, ISO 400

Overall Winner: Adult

WINNER: Ted Gore, motion graphic designer, Los Angeles, California

Where he was standing: Mesquite Sand Dunes, Death Valley National Park, California

What inspired the shot: Awed by photographs of sand dunes that he'd seen, Ted Gore hoped to shoot them himself. He found exactly what he wanted on a trip to Death Valley.

Essential gear: Gore let the beauty of the dune shine and says only essential gear was his camera and lens. Since the scene did not call for slow shutter speeds, even a tripod was unnecessary.

How he processed it: This image is a combination of three: one shot of the sky, and two of the foreground (stacked to get front-to-back sharpness). He processed all three first in Lightroom CC to adjust contrast, sharpness, and color, then in Photoshop CC to composite and make further local adjustments.

Try it yourself: If you get inspired by this photo of the dunes as Gore did, protect yourself and your gear before you set out. Cover up bare skin and your camera—when the wind picks up the sand can damage both. Also, keep the heat in mind and plan ahead. Summer in Death Valley is scorching, but winter is the perfect temperature for exploration.

Tech info: Nikon D600 with an 17–35mm f/2.8D AF-S Nikkor FX IF-ED lens; 1/125 sec at f/11, ISO 100



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CUBA s and y Plant REAL

As relations with the U.S. thaw, this nearby country is luring more photographers than ever. How to get beyond the typical clichés of decaying architecture and classic cars? We talked to four photographers who are making amazing pictures of Cuba as it really is, right now.

By Peter Kolonia

TAXI!

Michael Christopher Brown caught a Havana resident (opposite) aboard a shared livery cab.

CITY SIGHTS

Some of Havana's hot spots, all by Brown, are (clockwise from top right) the Vedado district, the Malecon embarcadero, Old Havana parades, and street life in the Centro district.

OF THOSE Americans who benefit from the slowly opening gates to the 42,000-square-mile Caribbean nation of Cuba, photographers can be counted among the grateful. The country's urban and rural areas seem to have been fixed, as if in amber, since the 1950s. (It's tantalizing to imagine that some of the same backgrounds available to Walker Evans in the 1930s may still be there today.)

We spoke with four photojournalists who have explored the visual treasures of Cuba collectively for decades. The consen-



sus? Though some Cuban views have become visual clichés—i.e., 60-year-old DeSotos and Spanish colonial architecture—there are many other worthy subjects that should compel American photographers to pack their camera bags and head south.

“Speaking as a photographer, my daily encounters with the Cuban people are pure joy,” says Sven Creutzmann, a freelance photojournalist from Germany who is now based in Cuba. “I don’t know any other country in the world where photographing people is as much fun. The people

are so natural and open.” He was immediately drawn to their way of dealing with the hardships of daily life in a nation where basic comforts and amenities of the modern world are often unavailable.

According to Lisette Poole, a freelance photographer based in New York City, whose clients include the *New York Times*, *Wall Street Journal*, and *Newsweek*, “Of course, there’s the color, music, and an intense Caribbean vibe down there, but I’m especially struck by how remarkably prideful, joyous, and present Cubans can be. I had expected to find

HAVANA’S EL COTORRO

A typical Cuban street scene can include multiple implied narratives. Here, Lisette Poole captured car repair, strolling neighbors, a Santería novitiate, and a pet all in a single shot.

them depressed and downtrodden, but most often the opposite is true. They carry themselves with an attractive dignity and always make the most of whatever tools they have for enjoying life.”

As an example of Cuban openness, Poole mentions frequently encountering people on the street in animated conversation, displaying humor, warmth, and friendly charm, even though the individuals involved were perfect strangers. The opportunities for colorful street shooting are endless. “As a rule, Cubans are comfortable with each other in ways most Ameri-



WHERE TO GO

An insider's guide to must-shoot Cuban destinations, most in and around Havana

BARACOA Near the island's eastern tip, this city is the oldest Spanish settlement in Cuba. Sven Creutzmann says it offers "overwhelming landscapes and beautiful portrait backdrops."

CENTRO HAVANA Great for street shots, Eduard Bayer says, "It's the most populated neighborhood in all of Cuba."

FOXA BUILDING "Try to get to the top of the Foxa in Havana's Vedado," says Bayer. "Its views are stunning."

HOLGUÍN A charming city and province on the eastern end of the island, Holguín offers classic Cuban architecture and street scenes along with great sunrises.

FÁBRICA DE ARTE CUBANO "This huge cultural and music venue shows off Havana's night life at its best," says Bayer.

MALECON "Havana's embarcadero will reward a sunset visit and is where colorful locals hang out," according to Eduard Bayer.

PARQUE LENIN On Havana's outskirts, this park is where the city's youth meet on weekends.

PINAR DEL RIO On Cuba's western tip, it's the 10th largest city on the island and home to typical examples of Spanish colonial architecture along with rural landscapes.

SALÓN ROSADO DE LA TROPICAL This is Cuba's largest open-air concert venue, where old and young go to dance on Sunday afternoons.

OUT TO PASTURE?

In Cuba, visual non sequiturs abound. Here Poole pictured a resting horse posed before a modern, Soviet-era housing complex.

of the people, the light, and color are almost always on view; street photographers generally don't need to worry about keeping tourists out of their backgrounds.

The best news? Cubans typically don't mind having their picture

taken, if you approach them civilly and ask their permission. "Most Cubans are pretty outspoken, and if they don't want to be photographed, they'll let you know it as soon as they see your camera," says Poole. To chip away at any reluctance, she suggests introducing yourself as an American. "We're still pretty rare down there and it piques their interest to actually meet one of us. Generally Cubans feel culturally connected to the U.S., and almost everyone you meet has a close relative somewhere in America."

But, warns Creutzmann, if you see people dressed entirely in white, try to avoid taking their pictures. "They most likely will be initiating their life in the Santería religion which, in the first year, prohibits them of having their photo taken, shaking hands, or getting wet in the rain."

Getting There

After some 60 years of blockades, embargoes, and severe travel restrictions, "since January of this year flying into Cuba as a U.S. citizen has become relatively easy," says Creutzmann. Rules are easing on an almost monthly basis, and the U.S. Departments of State, Treasury, and Commerce are diligently updating their websites to reflect the new

cans aren't," says Poole.

Eduard Bayer, a Spanish photojournalist based in New York City, also sings the praises of Cuban street life. "It exhibits a vitality and exuberance that's unique to the island. There's always a lot going on, so much so that it can be hard to focus on one subject," he tells us.

While Old Havana and the city's Centro district are crowded with European and Canadian tourists, especially in winter, the vast majority of Cuba is—certainly by Caribbean standards—tourist-free. The spirit

LISETTE POOLE





freedoms and remaining restrictions. By the time you read this, even more relaxed regulations will likely be in place.

"There are plenty of flights to Cuba every day, especially between Havana and Miami," says Creutzmann. "You still need to travel under one of 12 licenses, but you don't have to apply for a permit from the U.S. Treasury Department anymore. When booking flights, you simply check the appropriate category."

Licenses typically used by photographers include Workshops, Journalism, People-to-People (i.e., cultural), and Family. (Find the complete list on the State Department's website, state.gov.) Americans are still unable to enter Cuba as simple tourists, but travel agents specializing in the island can help get you there; dozens of agents exist online.

Photo workshops to the island

are exploding in number, and they're also easily found with a quick web search. For first-time, nonprofessional photographers visiting the island, these workshops are highly recommended. One reason: While the détente between Cuba and America moves forward, there are still many places that require government-issued permits to visit and/or shoot. "Even accredited photographers have to apply with the [Cuban] authorities to work in many locations, and the process can be time- and nerve-consuming," says Creutzmann. Workshop organizers either take care of this paperwork or aim you toward unrestricted venues and subjects. (If you have family in Cuba, workshops may not be necessary to get your footing there.)

One of the pleasures of shooting in Cuba? Its streets are "super safe," as one of our photographers

PHOTOGENIC PEOPLE

Eduard Bayer captured this couple (above, left) at a street festival in Old Havana. The scene is typical of Cubanos' willingness to be photographed.

COLORFUL COIF
Bayer captured this soccer player (top right) at Havana's Estadio Marti. The hairstyling isn't unusual for Cuba, where people pursue creative outlets wherever they can find them.

FUTURE SHOCK
The sight of Cuban native with a laptop (bottom, right) was rare enough that Bayer thought this July 2015 scene had news value.



said. For one thing, there are virtually no handguns among the general populace. "It's probably the safest country in the Western Hemisphere," says Creutzmann. "Compared to Rio, Buenos Aires, Mexico City, or São Paulo, it's a walk in the park." Another reason to feel at home on these streets: Twenty years ago, it was difficult getting around Cuba without speaking Spanish, but today, especially in and around Havana, more and more Cubans have basic English down thanks to the growing importance of tourism.

In-Country Logistics

After decades of isolation from its northern neighbor, this relatively poor country with few natural resources or man-made exportables presents photographers with unavoidable logistical issues. Photographic equipment, accessories, and memory cards, for

example, are difficult to find, even in Havana's tourist zones. If you're lucky enough to find a 16MB compact flash card, it will be expensive. While it's relatively easy to charge batteries in Cuba, finding chargers or batteries (other than AA and AAA alkalines) can be difficult. "Bring in everything" was a mantra among these photographers.

Communicating with the outer world is also a challenge. The web is still something of an unknown in Cuba. There are state-run Internet cafes (*ETECSA* shops), but expect long lines and high costs. "Travelers have best Internet access in the larger hotels at costs up to \$8 U.S. per-hour," says Creutzmann. "And recently the Cuban government installed 35 Wi-Fi hot spots all over the country in public areas which you can access by buying Wi-Fi credits from *ETECSA* shops. A plus: You won't incur roaming charges using American-based cell phones.

SHIP SHAPE
"This joyfully playing girl is just the kind of reward that Cuba offers photographers who have the patience to wait for it," says Sven Creutzmann. He photographed the scene below in Havana's Playa district in 2013.

First-time visitors are often flummoxed by Cuba's dual currencies. In 2004, Cuba banned the American dollar, replacing it with the convertible Cuban peso, known by its acronym CUC. Worth slightly more than the U.S. dollar, it's used by foreign tourists and businesses to purchase (largely) foreign-made goods at prices significantly higher than international norms. The Cuban national peso, or CUP, which is worth slightly less than the U.S. dollar, is used by native Cubans to purchase subsidized food and household goods, at prices far below international norms.

For money, change your cash to CUCs and bring lots. Cuba isn't an inexpensive country for foreigners, and American credit cards aren't accepted (yet). Eduard Bayer suggests that as you travel the island, bargain with taxi drivers—public transportation is unreliable—before getting in a cab, because

they're notorious for overcharging.

Warning: There's also currently no GPS signal beamed to Cuba, so Siri can't help you get around. "There are, however, tour and guide services everywhere in Cuba, because such a huge chunk of their economy revolves around tourism," says Michael Christopher Brown, a Magnum photographer also based in New York City.

Don't let these hassles discourage you from a Cuban excursion. "It can be hard to get good food at times and the heat can be unbearable," says Lisette Poole, "but the rewards for me are endless." Cuba is a nation that's lived cut off from most of the Western world for decades, and the chance to capture that unique situation in photos will not last for long. Get there before there's a Starbucks and McDonald's on every block, and you will have experience—and capture—something really remarkable.





Film Rules

All you need to know to go analog

By Dan Richards; photos by Brian Klutch



FILM ISN'T available in the array of types that it was 10 years ago, and one-hour processing is nearly extinct. But there's still considerable demand

for film. Some snapshooters feel more comfortable with it, fine artists demand it, and digital natives want to try it. That's not to say that film will be with us forever; it comes down to whether companies can justify the price of manufacturing it. When producers stop making money on film, they will stop making film. In the meantime, though, you can enjoy a surprising variety of emulsions and processes. Here are our recommendations—and predictions—for filmophiles.

1 Color-print film will outlast others.

Called C-41 film, after the venerable Kodak designation for its development process, it might well be called The People's Film. Available on six continents (we're pretty sure there's no Rite Aid in Antarctica), C-41 is the most popular film of all time, a mainstay of graduation, party, and holiday photos—everything from casual snaps to professional portrait and wedding photography. These emulsions have astonishing exposure latitude, great color and grain characteristics—even the ISO 800 emulsions—and can be scanned to make digital files,

either at a photo lab or at home. If there will be one film type available in 2040, our bet is on C-41.

MORE TIPS FOR SHOOTING OLD-SCHOOL

Get a 35mm SLR. Do not use a point-and-shoot. If you don't have a user's manual, you can find a PDF for almost any camera online.

ISO and white balance are characteristics of the film, not camera settings. If you want a higher ISO, buy faster film.

With older cameras, you must set the ISO for accurate metering; newer cameras do it automatically via DX coding—the metallic striping on the film cartridge.

2 For a reliable supply, stick with 35mm.

It's the film used in everything from single-use cameras to the Nikon F6 and Leica M7. While larger film formats such as 120 and 4x5 remain in good supply, they are used mostly by commercial pros and fine artists. As these holdout photographers continue to migrate to digital capture, supply of the big films will get increasingly dicey.

3 If you shoot slide or b&w, find a lab.

You can find C-41 processing (or at least a dropoff point for it) in most moderately populated areas. Conventional black-and-white (silver halide) processing and color-slide processing (called E-6, another venerable Kodak term) are another story. You can process these films at home (b&w is not hard; color is pretty demanding), but if that's not in your agenda, use a custom lab. These



are clustered mostly in large urban markets, but they will work with you by mail order or package delivery and, for digitized images, via the internet. Custom labs can, by and large, do almost any processing, printing, or digitizing task you can think of. They are not inexpensive. Modernage in New York; Duggal Visual Solutions in New York and Portland, Oregon; The Icon and Laurel Photolab in the Los Angeles area; and Printlab and Gamma in Chicago are some well-established labs to check out.

4 Why shoot slide film? Because!

It has terrible exposure latitude, produces inaccurate color, and requires processing that's not widely available. And for half a century it was the color film for professional and enthusiast use. No one ever forgets the first look at a set of slides on a lightbox: the saturated colors, the sharpness, the seeming absence of grain, the depth of transparency film. It's very much an endangered species: Kodak is out of the slide film business entirely, leaving only Fujifilm as a major player. Fujichrome Provia 100F has fairly high color saturation, and the legendary Fujichrome Velvia 50 and Velvia 100 have intense color saturation. These films are superb for fashion, still life (jewelry!), flowers, city scenes, Mardi Gras, wildlife, and, of course, landscapes. They are not well suited to portraiture. And they are slow, so you will need a tripod in all but fairly bright light. If you're a filmie, you owe it to yourself to try at least a few rolls.

5 Scan that film.

It's a hoary cliché—the shoebox filled with negatives from days gone by, uncataloged and hopelessly

Virtually all film is color-balanced for daylight. If you shoot this film under tungsten, you'll get a yellow-red color cast; you can correct for it with an 80A filter when shooting or in software later.

When you finish a roll you need to rewind it into the cartridge. Newer cameras do this automatically; with older cameras, you have to rewind it with a crank. Check the manual.

disorganized. Don't let this happen to you! Chain big-box and drugstores offer CDs or DVDs of your film images at minimal upcharge (around \$5) from the processing. Online photo services (Mpix, thedarkroom.com, Indie Film Lab et al.) will digitize photos from film you send in for processing. If you're the DIY type, lots of not-too-expensive flatbed scanners let you scan negative and slide film. And if you're throwing up your hands in despair, some services (such as scanmyphotos.com and scancafe.com) will take that shoebox full of memories and scan them for you.

6 For simple b&w, go chromogenic.

Chromogenic film is b&w film designed to be processed in C-41 chemistry—that universal standard for color-print film. Two excellent emulsions are available in roll film: Kodak Professional BW400CN and Ilford XP2 400. Yes, you can always convert digitized color film to black-and-white imagery, but there's a certain charm (and discipline) to shooting b&w from the get-go. While some users describe these films as “muted,” they also have nice, creamy gradation and, like color-print film, have huge exposure latitude. Digitize these films, and you can use apps like Alien Skin Exposure or Nik Silver Efex Pro to get the look of “real” b&w. And you can drop these films off at your neighborhood drugstore.

7 Don't forget that drugstore.

Two generations ago people took their film to the drugstore for development. Today, people still take their film to... the drugstore. Major chain drugstores and big-box stores—CVS, Rite Aid, Walgreen's, Costco, Walmart, Target, etc.—offer a range of photo services for C-41 process as well as digital files. Online services run the gamut of photo books, calendars, greeting cards, and the ubiquitous photo mugs and mousepads. The in-store experience is, by and large, limited to photo kiosks, although you can usually summon human help. Film





“professional” buzzword has little meaning other than that the films are intended for serious photographers. Both of Fujifilm’s Fujichrome Velvia films are designated Professional, for example.

Slide film can tolerate a bit of underexposure. Pro shooters have long exploited this to get increased saturation in slides; 1/3 to 2/3 stop of underexposure will do it.

If you buy a lot of film and won’t be shooting it for a while, refrigerate it. Be sure to keep 35mm film in tightly capped canisters. If you’re keeping it for longer than six months, freeze it. Be sure to let the film come up to room temperature before shooting.

9 Life’s too short for bad film.

The toy camera and Lomography movement is fun, a breath of fresh air in a world obsessed with perfection. A fair number of films are being marketed under such a banner—some emulsions of questionable provenance or designed to produce weird colors. Use good makes: Fujifilm, Kodak, Ilford. You can always ruin a quality film image after the fact, but not vice versa.

10 Sometimes crappy wins.

Looking for that *je ne sais quois* that comes from a happy accident? Increase the chance of beautiful errors by letting go and trying a camera with a light leak, or off-brand film. You may end up tossing most of your shots, but shooting with unpredictable equipment can help you get creative.

8 Pro film isn’t always best.

It’s just different, sometimes. Traditionally, “professional” films have been sold shorter-dated so as to be closer to being “ripe” at purchase than films aimed at amateurs. C-41 pro films, such as Kodak’s Portra line and Fujifilm’s Fujicolor PRO emulsions, typically have lower contrast and more accurate colors, as opposed to “amateur” films like Kodak Gold and Fujifilm Superia, which tend to pop colors and contrast. For the most part, though, the

development entails putting your film cartridge in an envelope and dropping it in a box. Well, it’s worked for all these years. (Note that some chains, including CVS and Rite Aid, suspended online services due to a credit-card security breach at the third-party company providing the photo services. The retailers are expected to be fully back online by the time you read this.)

11 Beware of really old gear.

We love vintage cameras, and we don’t mean to discourage enjoying these masterpieces from days gone by (oh, that Pentax Spotmatic!). But if you intend to shoot for serious projects, consider a new or gently used film camera of recent make. And don’t disdain autoexposure, autofocus, and autoloading. Film and processing are too expensive to risk exposure and focus glitches, and older cameras are known to go out of adjustment (notably shutter) early and often.

12 Here are some cameras to look for.

Though discontinued, the Nikon FM10 is available as new old stock, provides manual loading, exposure, and focusing for \$500, street. At the other end of the Nikon spectrum is the F6 (\$2,400, street, new body), which has AF, AE, bursts of 5.5 frames per second, and shooting data memory. You can use lenses from your Nikon digital SLR with these, although the Nikkor DX lenses for APS-C will likely vignette. A used body of a similar Canon, the EOS-1v, goes for about \$600. Other Canons to consider: the EOS-1n, EOS 3, and EOS Rebel Ti. Full-frame Canon DSLR lenses will fit these cameras; APS-C (EF-S) lenses will not. Consider Pentax AF models PZ-1P and ZX-5; for manual focus, the MX and LX series. Late-model Minolta Maxxums have many lenses available and share the lensmount with Sony A-mount DSLRs. The Olympus OM-series SLRs are beautiful and wonderful to use; you can adapt OM-mount glass to Olympus Micro Four Thirds digital interchangeable-lens compacts.

13 Large-format film is in decent supply.

Film for big cameras—4x5 and even 8x10—seems to be holding on pretty well in the marketplace, primarily due to the cadre of professionals who demand the quality that big film can give them. Fujifilm, Ilford, and Kodak 4x5 b&w and color sheet film can be found in stock at major photo retailers, and 8x10 can be found, too, although sometimes only by special order.

14 For odd sizes of big film, find a co-op.

Not every user of big sheet film wants standard sizes (4x5, 8x10). If you need oddball sizes, get with a co-op to order them. A valuable resource here is K.B. Canham Cameras (canhamcameras.com), which makes high-end field and view cameras and, naturally, has a vested interest in keeping its clients in film.

Canham has this deal with Kodak: Kodak will make sheet film in any emulsion in current manufacture in any configuration up to 40 inches in

Overexpose color print film for better results. C-41 employs agents called DIR couplers, which inhibit development once a certain density is reached. With overexposure, extra development will occur in the shadows, while highlights will stay under control. Result: lower contrast, easier printing, and sometimes even finer grain.

one dimension. The deal is that you need wait until enough customers sign on to meet a minimum order.

15 You can even get film in old formats.

As we've already said, vintage cameras can be a hoot to use. But what if you have a Kodak Medalist (which uses 620 film—an obsolete spool) or a Baby Rollei (a cute little twin-lens using obsolete 127 film). Despair not. A company called Film For Classics trims and/or respools modern film for use in cameras that use defunct film formats—620, 127, 828. It offers Fujifilm, Ilford, and Kodak films in sizes like these. Note that Film For Classics no longer sells direct; you need to go through a retailer, such as B&H.

16 It's still easy to process/print film yourself.

Darkroom equipment hasn't gone away. Redoubtable firms such as Beseler and Omega are still very much in business making enlargers; prices on new equipment aren't too bad, although better enlarging lenses can be

pretty pricey. But there is also a vast stockpile of used processing and printing equipment to be had at bargain prices, and the place to go for them is (surprise!) eBay. The usual eBay buying caveats apply. As for paper and chemicals, many big photo retailers such as Adorama and B&H stock a good supply; the mail-order house Freestyle Photographic Supplies (freestylephoto.biz) specializes in film, printing paper, and chemicals, including some oddball and hard-to-find varieties.

17 Yes, there is instant-print film available.

People still like a hard-copy print in their hands. So there's plenty of instant-print film available, both in Polaroid and Fujifilm varieties (see Backstory, p. 94, for a portrait shot on the latter). One retailer, for example, lists 36 different instant films for sale. Both Fujifilm and Lomo make new instant-film cameras. And if you have an old, presumably obsolete Polaroid camera, an outfit called the Impossible Project makes film packs for Polaroid 600, SX-70, and Spectra cameras, plus large-format sheet film. It sells direct (the-impossible-project.com) and through retailers such as Adorama.





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\$1,996 ⁹⁵ | D Oben CT-2491 CF Tripod and BC-166 Ball Head
#OBCT2491K2
\$664 ⁹⁵ |
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#LIA1X1BC
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#CAE5DS
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ILC TEST

ALPHA STAR

Sony's A7R II
shows strength

WHEN SONY first announced the original Alpha 7R, our 2013 Camera of the Year, its 36.4MP full-frame sensor had the most pixels ever used in the Alpha line. Now, while Canon holds the title for the most pixels on a full-frame 35mm sensor with its

50.6MP EOS 5Ds, Sony has upped its game to 42.4MP in the A7R II.

Naturally, it wouldn't be like Sony to stop there. This model also sports the first full-frame back-side illuminated (BSI) sensor in a consumer camera. By putting the sensor's circuitry on the

back, there's more room for the photodiodes that collect the light, and potentially less noise at higher ISOs. With sensitivity settings up to ISO 102,400, the A7R II (\$3,198, street, body only) aims to push that potential as far as it can.

One of the biggest complaints

SONY ALPHA 7R II **KEY SPECS**

SENSOR: 42.4MP
BSI CMOS (full-frame)

SENSITIVITY:
ISO 50–102,400

BURST RATE: 5 fps

AUTOFOCUS: 323
selectable AF points

PRICE: \$3,198, street,
body only

INFO: sony.net



PHILIP RYAN (LCD IMAGE, CAMERA TOP)

about the original A7R was the vibration caused by the shutter mechanism. Sony redesigned it for the A7R II and added an option called Silent Shutter that eschews the mechanical shutter altogether for a vibration-free capture. This assumes that you have your camera mounted on a tripod, are triggering it through the built-in Wi-Fi, and that whatever you have the tripod placed on is free of any vibration.

Shooting handheld or on a tripod on a shaky floor? The A7R II also has the same five-axis image stabilization system that Sony includes in the A7 II and the

just-announced A7S II. Another improvement: The camera's new image sensor-based autofocus system boasts 399 embedded phase-detection points and claims to be 40 percent faster than the one in the A7R.

As super cameras go, this one looks super-duper on paper. That's why we ran it through the *Popular Photography* Test Lab and took it out in the field to see how it measures up to the other cameras we've put to the test.

In the Test Lab

With oodles of pixels, accurate colors, and well-controlled noise

AMATEUR PRO

at lower ISOs, the Sony A7R II easily earned an Excellent rating in overall image quality from ISO 50 through ISO 800 in our lab tests. The camera barely achieved an Excellent rating in color accuracy with an average Delta E of 7.9 that puts it just below our cutoff of 8 in this test (lower scores here are better).

While we expected that Canon's 5Ds would beat this Sony in our resolution test, thanks to the EOS sensor's extra pixels, it did so only by 180 lines. The A7R II captured 4000 lines per picture height at ISO 50. In the case of both cameras, we ran the test using the mechanical shutters. As we always do with DSLRs, the Canon was in mirror lock-up mode to avoid vibration due to mirror slap. Sony's A7R II, a mirrorless interchangeable-lens compact (ILC), didn't need such accommodation, of course.

In assessing resolution, remember, though, that the A7R II uses the BSI sensor design and extends to sensitivity settings well beyond the Canon's top of ISO 12,800. The Sony's ability to hold more of its resolving power as the sensitivity increases led to it taking the resolution lead at ISO 6400 and beyond. At ISO 6400 the A7R II pulled in 3550 lines, while the EOS 5Ds had fallen to 3400. At ISO 12,800 the Sony captured 3325 lines and the Canon 3125. By ISO 51,200 the A7R II fell to 3000 lines, ending up with 2475 at its top sensitivity of ISO 102,400.

When setting out to process the test images from the A7R II, we faced a bit of a quandary. Sure, the camera ships with Sony's Image Data Converter software, and we usually test RAW files converted to TIFFs using the software that comes with the camera. But Phase One has also been offering a free version of its Capture One software for Sony users. After processing our files with both of these

What's Hot
42.4MP CMOS sensor, world's first full-frame BSI sensor

What's Not
Autofocus is a tad sluggish in low-light situations

Who It's For
Shooters looking for as much resolution as they can get in a full-frame Sony camera

TEST RESULTS



SPECIFICATIONS

IMAGING: 42.4MP effective, full-frame 35mm Exmor R CMOS sensor captures images at 5472x3648 pixels with 14 bits/color in RAW mode

STORAGE: Memory Stick PRO Duo, SD, SDHC, and SDXC store JPEG, ARW RAW, and RAW + JPEG files

BURST RATE: Full-sized JPEGs (Fine mode), up to 30 shots at 5.0 fps (with continuous AF and metering enabled); RAW, up to 23 shots at 5.0 fps

AF SYSTEM: TTL contrast detection with 323 selectable spot areas; single-shot and continuous AF with focus tracking and face detection

SHUTTER SPEEDS: Mechanical: 1/8000 to 30 sec, plus B (1/3-EV increments); X-sync speed: 1/250 sec

METERING: TTL metering with 1200-zone evaluative, centerweighted, and spot (size of spot unspecified)

ISO RANGE: 100-25,600 in 1/3-EV increments, expandable to 50-102,400

FINDER: 0.5-inch, 2,359,296-dot OLED with 100% accuracy; 0.78X magnification

VIDEO: Records at up to 3840x2160p 30 in XAVC S (at up to 100Mbps); up to 1920x1080p 60 in AVCHD (at up to 28Mbps); built-in stereo microphone; stereo microphone input; clean HDMI output to external recorder

FLASH: No built-in flash

LCD: 3-in. TFT with 1,228,800-dot resolution; five-step brightness adjustment

OUTPUT: Micro USB, micro HDMI video, Wi-Fi, NFC, minijack headphone

BATTERY: Rechargeable NP-FW50 Li-ion, CIPA rating 290 shots

SIZE/WEIGHT: 5.0x3.9x2.4 in., 1.4 lb with a card and battery

PRICE: \$3,198, street

INFO: sony.net

400 and 800, again matching the Canon. However, the 5Ds scored a Low rating for noise at ISO 1600, while the Sony jumped up to Moderately Low (slightly noisier) at that setting. This explains why the range of Canon's Excellent overall rating extends to ISO 1600 while the Sony's extends only as far as ISO 800. Both cameras reach an Unacceptable rating at ISO 6400 and beyond, though the Canon proved a tad less noisy at ISO 12,800, perhaps contributing some to the disparity between the two camera's resolution scores at that sensitivity. The Sony does manage to keep noise relatively tame at ISO 25,600, after which noise really picks up.

In our image stabilization test, the A7R II did quite well. Our testers were able to get an average of 3.3 stops of shutter speed advantage while shooting handheld with the 70-200mm f/4 Sony G OSS lens mounted to the A7R II and racked out to 200mm. In this configuration, the lens handles the pitch and yaw adjustments, while the sensor shifts to adjust for roll as well as movement on the X and Y-axis. Performance may vary if you use a lens that doesn't have optical stabilization, as this may restrict the number of axes available for stabilization. You'll still get some benefit though, even when you are using legacy glass mounted with an adapter. If you're using a lens that can't communicate with the camera body, you will have to enter the focal length manually through the menu system in order to get the best result possible.

programs, we found that Capture One (for Sony) offered a better balance of controlling noise while maintaining resolution, so the results presented here are what we got using Capture One.

The A7R II earned top honors with an Extremely Low rating in our noise test from ISO 50 through 200. The same can be said for Canon's 5Ds. The Sony earned Very Low ratings at ISO

UPGRADE
Sony plans to add uncompressed 14-bit RAW capture with a future firmware update.

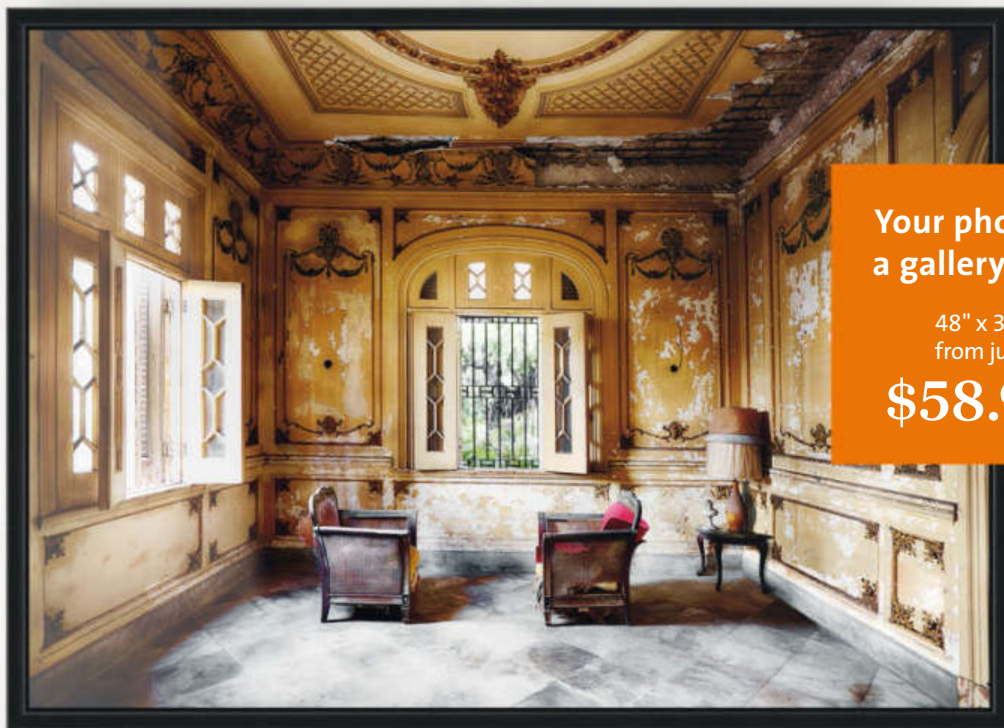
In the Field

With a design that's very similar to the A7 II tested in our March 2015 issue, the A7R II keeps up with the advances Sony has made

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to the look and usability of the whole A7 line. The shutter button moved forward a bit and is more ergonomically angled compared to the original A7R. The grip as a whole has been improved significantly over its predecessor, with a more sculpted design with better ergonomics overall. The OLED electronic finder has revised optics and checks in with a magnification of 0.78X, up from 0.71X, for a more immersive shooting experience.

Dual command wheels make manual shooting easier than it is in most entry-level DSLRs and ILCs. As with the A7 II, the A7R II has an ample supply of assignable control buttons and the function menu (accessed by the Fn button) gives you quick access to whatever commonly changed settings you haven't assigned to a button. The only hiccup we found happened

when we wanted to enable or disable SteadyShot (Sony's term for image stabilization) while using a lens that doesn't have a dedicated switch for it on the lens barrel. The setting is buried in the camera's menu on page 8 of the first menu tab. It seems particularly strange given that the first page of the menu includes the settings for panorama size and direction, both of which are grayed out unless you're using the panorama shooting mode. It's a relatively minor gripe, but it did slow us down a bit.

Burst shooters who want extremely fast continuous drive might want to look toward a camera with fewer pixels, though the A7R II does offer 5 frame-per-second capture with full AF and metering. That's where we usually draw the cutoff for sports shooting, though you can find a lot of cameras with faster bursts

THE EYES HAVE IT
If you like to use continuous AF while shooting portraits, you might want to try Sony's Eye AF mode. It will detect and track an eye and keep it in focus even if your subject moves between shots.

than this one has. The buffer depth isn't amazing, though given the file sizes involved, we were impressed that you can shoot up to 30 large, fine JPEGs, or up to 23 RAW frames before the camera slows. By the way, if you don't mind dealing with even larger files, Sony recently announced that it will offer 14-bit uncompressed RAW capture, available through a firmware update; at press time, the camera compressed its RAW files to take up less space.

Autofocus proved plenty fast with the A7R II. There's a noticeable improvement over its predecessor and you can even get phase-detection AF when using a Metabones adapter and a Canon lens. Shooting in very dim light conditions, you'll definitely notice slower AF, and this still may be a distinct advantage of the Canon 5Ds when comparing

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these two high-resolution cameras. Of course, the Sony will likely be taken into more low-light situations thanks to it offering more high-ISO options.

AF tracking proved formidable. Sony flew a bunch of tech journalists out to Portland, Oregon, for our first experiences with the A7R II. On that trip, we were able to track along with skateboarders on a mini ramp. When in tracking mode, the camera overlays the active AF points on the subject it is following. This was a good indicator that it was maintaining the tracking and helped ease our mind while shooting.

Video shooters have a lot of options with the A7R II. You can capture at up to 3840x2160 at 30 fps in the XAVC S format at up to 100Mbps. You can also capture in the AVCHD format, though that tops out at 1920x1080

FOCUS MANUALLY
If you like to take charge of focusing instead of letting the camera handle it, be sure to try the focus peaking and focus magnifier. Peaking adds a halo around whatever is in focus, while magnifier enlarges the finder view for more precise manual control.

at 60 fps and 28 Mbps. All the video we captured looked very nice, with plenty of detail for the given format. Video geeks will appreciate that you can select a picture profile that lets you record using the S-Log2 gamma curve to get the best dynamic range you can when capturing video with the A7R II.

The Bottom Line

The idea that Sony has been able to create a full-frame camera this small, with sensor-shift stabilization and a BSI sensor, is somewhat mind boggling. It wasn't that long ago that the company launched the first NEX line. The FE line of lenses still has plenty of room for growth, but as Sony continues to build it out and third-party manufacturers get involved, the list of lenses available for the A7R II is growing relatively rapidly. Furthermore,

Sony's LA-EA3 or LA-EA4 mount adapters let you use any A-mount glass with the camera, and through third-party adapters you can mount a vast array of glass from other systems on the A7R II.

When it comes to absolute resolution in the 35mm (full-frame) sensor format, this Sony still trails the Canon EOS 5Ds. However, the A7R II ends up being a more versatile camera as it stands up to low-light shooting better than the Canon, despite not being able to equal the low light AF performance. Add in 4K video capture, and a lower price, and the A7R II pulls further ahead. For some shooters, the difference in size and weight alone will be more important than the 4K capture.

Once again, Sony has found itself at the forefront of image capture. We look forward to seeing what happens next.

—Philip Ryan

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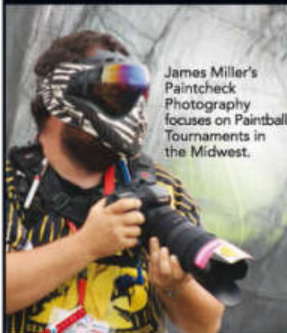
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"To photograph the colorful exuberance of an Illinois Paintball tournament, James Miller stepped into the action with his Canon 7D and Tamron 70-200mm lens. As usual, mounted on front was a Schneider B+W F-Pro UV Haze filter because he knows its superior quality delivers outstanding images, while eliminating UV light and bringing the vivid Paintball colors into clarity. Thank goodness. A shot hit smack dab in the middle of his rig with a CRACK! But back on the sidelines James breathed easy as he threaded off the brass B+W filter ring. Despite the shattered filter, his lens was safe—no breaks, no scratches. With a new B+W, he's back in the game, confidently shooting all of the excitement of Paintball."



James Miller's Paintcheck Photography focuses on Paintball Tournaments in the Midwest.



PLUG AND SHOOT



A new compact to improve an iPhone

UNTIL NOW, Wi-Fi has been the main way that camera makers suggest you move images from your camera to your smartphone when you're not near a computer. But with the DxO One, users of the more recent iterations of Apple's iPhone or iPad have the option to let JPEGs push directly to the Camera Roll through the Lightning connector on their smartphone. The nearly

KEY SPECS

SENSOR:
20.2MP BSI CMOS
(1-inch)
SENSITIVITY:
ISO 100–51,200
VIDEO: Full HD
(1080p) at 30 fps
PRICE: \$599, street
INFO: dxo.com

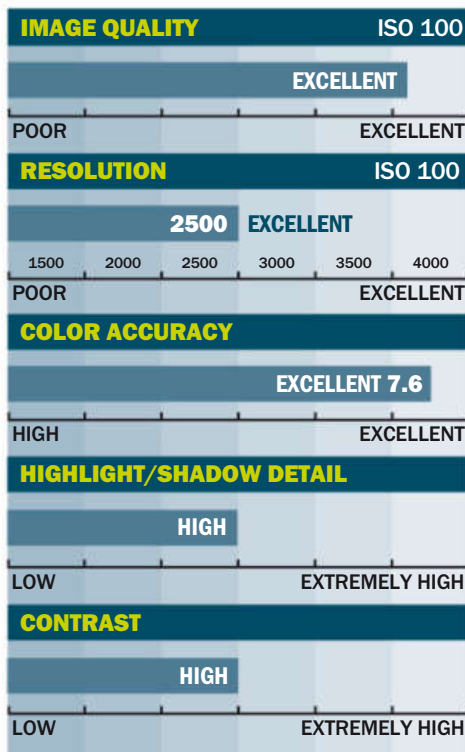
instant process makes this add-on camera feel more like a natural extension of the phone or tablet.

With a 20.2MP 1-inch backside illuminated (BSI) CMOS sensor, a 32mm (equivalent) f/1.8 lens, shutter speeds as fast as 1/8000 sec, and sensitivity reaching up to ISO 51,200, the DxO One offers a more compelling camera platform than any smartphone we've seen. It allows real aperture control and, with a sensor that's much bigger than the one in any smartphone, you can actually limit

depth of field to a pleasing degree. Combine that with the powerful DxO OpticsPro 10 RAW conversion software, included with the camera, and you'll get images with much less noise than you can capture from the built-in camera on a smartphone.

In addition to Optics Pro, the One comes with licenses for DxO Connect to manage and import images and, DxO FilmPack, which lets you apply filters to mimic the looks of different film emulsions. The cost of buying the software alone represents

TEST RESULTS



SPECIFICATIONS

IMAGING: 20.2MP effective, 1-inch BSI CMOS sensor captures images at 5540x3688 pixels with 12 bits/color in RAW mode

STORAGE: MicroSD UHS-I U3 stores JPEG, DNG RAW, RAW + JPEG, and SuperRAW (.DXO) files

AF SYSTEM: TTL contrast detection with face detection; single-shot and continuous

SHUTTER SPEEDS: 1/8000 to 15 sec (1/3-EV increments)

METERING: TTL metering with multi-zone (evaluative), centerweighted, and spot (size of spot unspecified)

ISO RANGE: 100–12,800 in 1-EV increments, plus ISO 25,600 (Hi 1) and 51,200 (Hi 2)

VIDEO: Records at up to 1920x1080p 30 fps in

H.264 (at up to 28Mbps)

FLASH: Uses the flash of the iDevice to which it is connected

LENS: 32mm (equivalent) f/1.8 lens

OUTPUT: Micro Hi-Speed USB 2.0, Lightning connector

BATTERY: Integrated Li-ion, CIPA rating 200 shots

COMPATIBILITY: iPhone 6s Plus, iPhone 6s, iPhone 6 Plus, iPhone 6, iPhone 5s, iPhone 5c, iPhone 5, iPad Pro, iPad Air 2, iPad Air, iPad mini 3, iPad mini 2, iPad (4th Gen); iOS 8 or later

SIZE/WEIGHT: 1.0x2.7x1.9 in., 0.24 lb with a card

PRICE: \$599, street

INFO: dxo.com

three-fifths of the \$599 (street) price of the camera. With the big potential the DxO One has on paper, and its promise of a new kind of shooting experience, we became eager to see what images we'd end up with and wasted no time subjecting it to the rigors of the *Popular Photography* Test Lab and real-world field tests.

In the Test Lab

Rather impressively for a camera with a 1-inch sensor, the DxO One

managed to earn an Excellent overall image quality rating in our lab at ISO 100. Step up to ISO 200, though, and the resolving power falls just below our cutoff for top honors. Noise is well controlled when shooting DNG RAW images, so the resolution is the limiting factor here.

However, for really impressive noise control we should first address the file types the DxO One captures. It can shoot JPEGs, DNG RAW images, both at once, or a special file type

RAW SUPPORT

The DxO One's DNG files will work with Adobe Photoshop and Lightroom with no trouble. DxO hopes to have support for its SuperRAW files in Adobe's software by the end of this year.

that DxO calls SuperRAW. The latter is actually a combination of four exposures done in quick succession and with the same exposure settings. Since most image noise is random, each of the four images will have noise in different locations within the frame. When converting the SuperRAW file with Optics Pro, Connect, or FilmPack software, DxO's noise reduction process can gain information from one of the four captures to fill in for information that might be obscured by noise in another. DxO calls this temporal noise reduction.

The advantage of SuperRAW is mainly lower noise, so its effects show most prominently at higher ISOs. That said, you'll still get drastic benefits at lower sensitivity. We shot our noise test in both DNG RAW and SuperRAW and were surprised by what we saw: The DNG files earned a Low or better rating up to ISO 1600, while the SuperRAW files maintained a Low or better rating up to ISO 6400. For reference, Canon's EOS 5D Mark III kept to a Low rating up to ISO 12,800, just one stop higher, with significantly more resolving power at that setting—but it's a full-frame DSLR that costs nearly five times as much and certainly can't fit in your jeans pocket.

We didn't see any major fallout in our resolution test when shooting SuperRAW at lower ISOs, but we did see an increase of between 100 and 200 lines at the DxO One's highest ISOs compared with DNG RAW files converted with OpticsPro using its most advanced noise reduction method, PRIME. (We used this for all of our lab testing with the DxO One outside of SuperRAW mode.) The obvious limitation of SuperRAW is that you should use a tripod when shooting these files, since the camera is combining multiple images into one file.

As mentioned, the DxO One aced our resolution test at ISO 100. It did so by capturing 2500 lines per



The Readers' Photo Contest gives photographers the opportunity to win prizes and have their work recognized in the April 2016 issue of *Popular Photography*, as well as on PopPhoto.com.

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People

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DEADLINE: December 31, 2015

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LAB CAMERA TEST DXO ONE

picture height, exactly the lower limit for an Excellent rating. At ISO 400 it dropped a little to 2410 lines. By ISO 1600 resolution moved down to 2250 lines. But from there the resolving power drops faster to 1700 lines at ISO 6400 and 1660 at ISO 12,800, ending up at 1500 lines at ISO 51,200.

Compare that to the LG G4 smartphone, which we tested last month. It captured 2125 lines in our test of its JPEGs at ISO 50 or 2225 lines for RAW files. As sensitivity rose, though, the benefit of RAW over JPEG became negligible with the LG. And its resolution fell to 1960 lines by ISO 800 and 1750 at its highest sensitivity of ISO 2700.

In our color accuracy test the DxO One earned an Excellent rating with an average Delta E of 7.6.

Obviously, this camera can outperform even one of the best smartphones on the market—and if you want to print, enlarge, or significantly crop your mobile photos, you'll really notice the difference.

In the Field

The DxO One has only one button—the two-stage shutter button with the familiar half-press to focus and meter and full press to trip the shutter. You pull down on the sliding lens cover to turn the camera on and pull it down a bit further to pop out the Lightning connector.

If you have a favorite case for your iDevice, you may run into some trouble plugging the DxO One into the Lightning port. Most cases seem to assume that you'll be plugging one of Apple's cables into your device. We had to remove Apple's own smart cover from our iPad mini 2 so that the DxO One would attach. Apple's silicone case for its iPhone 6 lets you connect the One without a problem.

When you first plug it into your iPhone or iPad, you'll be prompted to download and install the free DxO One app if you haven't already done so. If the app is installed and your phone isn't locked, the app will launch automatically when you plug in the camera. If the phone is locked when you plug the camera in, you'll have to unlock it and then manually open the app. So, if speed is key, remember the proper order of operations and unlock your phone before connecting the camera.

The app lets you use the iPhone's screen as the finder and has touchscreen controls for all the main camera settings you'd find in most point-and-shoot cameras. The main thing that is missing is burst shooting, but DxO says that this will be added in the not-too-distant future. You do have the option of either a 2- or 10-second timer. Program, aperture- and shutter-priority, and manual modes are supplemented by scene modes for sports, portraits, landscape, and night. There are options to add a Rule of Thirds grid, or to enable or disable flash (the DxO One uses the flash built-in to your iPhone).

Since this is a smartphone experience, it wouldn't be complete without a selfie mode. The unique Lightning connector on the DxO One lets you rotate the camera up or down by 60 degrees in either direction. Since that's not enough for a selfie, you can plug the camera in backwards—with your iDevice's screen facing you—and the DxO One will automatically enter this mode. It sets a 2-sec timer after you press the shutter button, and the screen lights up with a slightly warm tone to add pleasing illumination to your self-portrait. As in the other shooting modes, there's a soft shutter release button on the touchscreen interface. In selfie mode, this ends up right where your right-hand thumb lands naturally; in other modes, it offers a convenient left-hand trigger option.

We found the DxO One very intuitive to use. We learned in advance how to close the Lightning connector, but the first time you shut down the camera, it shows a brief video that tells you to center the rotation of the connector before removing the camera and then pull all the way down on the lens cover and fold the connector into its home position before sliding the cover back up over the lens. This process feels a bit clunky at first, but in time we were able to do it one-handed.

As we indicated earlier, DxO plans to add functionality to the One through updates to the app and presumably to firmware. In the menu portion of the app, you can check for new firmware. You can also redeem the licenses for the software that comes with the device.

As you might expect from the camera's

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size, its nonremovable rechargeable Li-ion battery can't match the number of shots that you'd get from most DSLRs or ILCs: it provides about 200 shots per charge. However, the DxO One charges through its micro USB port and you can power it with a portable USB charger while you shoot. Similarly convenient is that it has a microSD slot—something your iPhone sorely lacks. You won't find a card in the box, though, so remember to buy one when you get the camera.

We've talked mostly about still shooting, but the One can also shoot video at up to 1080p at 30 frames per second. The footage we captured looked nice, with only modest jello effect. The iPhone does a fine job of video, though, so you don't get as big an advantage here as with stills.

Also, despite our focus on the hard connection, you can also use the DxO One when it's not connected to an iDevice. You'll be shoot-

ing blind when it comes to framing, but you can capture both stills and video, switching between the two by swiping the tiny touchscreen on the back of the camera.

The Bottom Line

If you're looking for more control and better image quality than your iPhone can provide, the DxO One is a nice step up and should become better as more features are added.

You can definitely get more control and more advanced focusing and other features with an interchangeable-lens compact or DSLR, of course. But the DxO can much more easily come with you anywhere. Plus, its seamless integration with the iPhone means that you can use the JPEGs it produces exactly as you would the images captured by the iPhone itself. So, uploading images to the social media of your choice or using them with photo editing apps is simple.

NO SLO-MO

While we liked the video footage we got from the DxO One, iPhone owners who are wowed by the slow-motion video their phones can create will have to stick with the iPhone's camera for such smoothly dramatic footage.

It does have a few competitors as a camera add-on for smartphones: Sony's QX1 (\$398, street) and Olympus's Air (\$300, street). These are both less expensive than the DxO One, but they are actually bodies only and require interchangeable lenses, which brings the price up considerably. The Air is available as a kit that bundles Olympus's 14-42mm f/3.5-5.6 electric zoom for \$500 (street), but the DxO One is even simpler to use and comes with great image editing software. Both the Olympus and the Sony trade the DxO's tight iPhone integration for the versatility of swapping out lenses. And, if you're an Android user, forget about the DxO.

We can't decide what's best for you, but, obviously, if you don't want to get involved with changing lenses or if you appreciate a camera that is tiny in size and smooth in operation, then the DxO One might be just the camera for you. —Philip Ryan

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COVER ALL

A zoom that goes from wide to long

THIS IS TAMRON'S second 18–200mm zoom for DSLRs with APS-C-size sensors. The first, tested back in July 2005, is one of the company's best-sellers and still on the market for \$199 (street). This new 18–200mm f/3.5–6.3 Di II VC (\$250, street) adds Tamron's Vibration Compensation for longer-exposure handheld shooting, along with a few other appealing features. Aimed primarily at beginners and casual shooters, it covers the range from wide-angle group shots to distant scenery at a full-frame equivalent of 24–320mm (Canon) or 27–300mm (Nikon and Sony A-mount).

The new lens weighs a scant 14.1 ounces, according to the specs (our Canon-mount test unit weighed 14.4); Tamron claims this is the lightest lens of its kind. It has 16 elements in 14 groups, including a LD (low dispersion) lens element to minimize chromatic aberrations. It also has a new autofocus drive and moisture-resistant construction. The zoom ring is extremely large (1.64 inches) and easy to grip, but zoom action was a bit uneven. The focusing ring was only 0.2-inch wide with no focusing scales at all. Autofocus was quick and quiet but not completely silent.

In the *Popular Photography* Test Lab, the Tamron performed well for a zoom in this class. Its SQF scores for sharpness and contrast were in the Excellent range at all focal lengths, a strong improvement at 200mm, where its predecessor mustered only Good scores. (It also did better than Nikon's comparable zoom at 200mm, also rated Good.)

In our tests using DxO Analyzer 5.3, distortion control proved much

enhanced from the previous version. Barrel distortion at 18mm dropped to Visible from Very Visible, and at both 100mm and 200mm pincushion dropped to Slight from Visible. This was on par with others in the category, though Nikon's 18–200mm produced slightly less distortion (0.29%) at 50mm. Again, vignetting improved slightly, especially at 50mm where we found no light falloff at all.

In close focusing and maximum magnification, the Tamron performed right in the middle of the pack—all the lenses were quite similar. Tests of the stabilization system showed a 2.33-stop gain in handheld shutter speeds, less than its rivals (Nikon did best with a 4-stop gain), but we thought this was a good result considering both the price of the lens and the lack of VC in its predecessor.

TEST RESULTS

DISTORTION: At 18mm, 0.64% (Visible) barrel; at 50mm, 0.53% (Visible) pincushion; at 100mm, 0.21% (Slight) pincushion; at 200mm, 0.17% (Slight) pincushion.

LIGHT FALLOFF: At 18mm, gone by f/5; at 50mm, none; at 100mm, gone by f/6.3; at 200mm, gone by f/8

CLOSE-FOCUSING: 17.43 inches

MAXIMUM MAGNIFICATION RATIO:

At 18mm, 1:16.30; at 50mm, 1:8.50; at 100mm, 1:4.05; at 200mm, 1:3.41

IMAGE STABILIZATION: 2.33 stops

SPECIFICATIONS

18-200MM (18.91–207.68mm tested), f/3.5–6.3 (f/3.51–6.02 tested), 16 elements in 14 groups. Focus ring turns 70 degrees. Zoom ring turns 80 degrees. Focal length marked at 18, 35, 50, 70, 135, and 200mm.

DIAGONAL VIEW ANGLE: 75–7 degrees

WEIGHT: 0.9 lb (Nikon mount)

FILTER SIZE: 62mm

MOUNTS: Canon AF, Nikon AF, Sony Alpha AF

INCLUDED: Lenshood

STREET PRICE: \$249

INFO: tamron-usa.com



What's Hot
Enhanced quality
at a bargain price

What's Not
No focusing scales

Who It's For
APS-C-sensor
shooters who
want to carry just
one lens

All told, this new Tamron marks a significant step up from its popular predecessor. Travelers and anyone who wants to save both weight in the camera bag and money in the bank should consider it.

—Julia Silber

SUBJECTIVE QUALITY FACTOR

Our standard
lens test, SQF
rates sharpness
by print size

Size	5x7	8x10	11x14	16x20	20x24
3.5	95.9	94.6	91.6	85.8	78.8
4.0	96.0	94.7	91.8	86.1	79.2
5.6	95.7	94.4	91.3	85.1	77.6
8.0	95.8	94.5	91.4	85.3	77.9
11.0	95.8	94.5	91.5	85.5	78.2
16.0	95.5	94.1	90.9	84.4	76.6
22.0	94.8	93.2	89.4	81.5	71.7

Size	5x7	8x10	11x14	16x20	20x24
5.0	96.0	94.7	91.9	86.8	81.0
5.6	96.1	94.8	92.1	87.1	81.4
8.0	96.1	94.9	92.1	87.2	81.6
11.0	95.9	94.6	91.7	86.5	80.5
16.0	96.7	94.3	91.2	85.6	79.1
22.0	94.9	93.3	89.6	82.5	74.1
32.0	94.4	92.7	88.5	79.8	69.1

Size	5x7	8x10	11x14	16x20	20x24
5.6	94.9	93.4	89.7	82.8	74.6
8.0	95.0	93.5	89.9	83.2	75.3
11.0	95.2	93.7	90.3	84.1	76.8
16.0	95.0	93.5	89.9	83.2	75.5
22.0	94.5	92.8	88.8	81.1	72.0
32.0	94.0	92.1	87.7	78.7	67.7
36.0	94.0	92.2	87.8	78.8	67.8

Size	5x7	8x10	11x14	16x20	20x24
6.3	95.4	94.0	90.7	84.2	76.4
8.0	95.4	94.0	90.6	84.0	76.1
11.0	95.6	94.3	91.1	84.8	77.4
16.0	95.8	94.5	91.6	85.9	79.3
22.0	95.5	94.1	90.9	84.8	77.5
32.0	95.1	93.7	90.1	82.9	74.2
40.0	94.9	93.3	89.5	81.5	71.6

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A wide-angle that's filled with surprises

WHEN WE tested Sigma's 18–35mm f/1.8 lens in our November 2013 issue, we saw it as a one-of-a-kind phenomenon: the industry's first f/1.8 constant-aperture zoom and the fastest for cameras with APS-C sensors. Well, Sigma managed to top itself. And its 24–35mm f/2 DG HSM Art lens, the first full-frame f/2 zoom, provides roughly the same optical performance as Sigma's 24mm f/1.4 and 35mm f/1.4 primes.

This \$999 (street) lens has 18 elements in 13 groups, including large-diameter aspherical elements. This ups the weight to 2.16 pounds, though it balanced nicely on our test cameras (the Canon EOS-1D X in the lab and EOS 5D Mark III in the field). Both zoom and focusing rings are amply sized and ribbed, but the focusing scale in feet is almost invisible; the meter scale is fine.

The nine-blade aperture produces nice bokeh, but its minimum is only f/16, which makes deep-focus, long-exposure landscape and sunset shots more difficult. Autofocus is quick and virtually silent.

On our optical bench in the Popular Photography Test Lab, the lens garnered excellent SQF results for sharpness and contrast at all focal lengths. Comparisons are difficult, given its speed and focal-length range, but it outpaced full-frame f/2.8 wide-angle zooms, edging out Canon's EF 16–35mm f/2.8L II at 24mm and Nikon's older 17–35mm f/2.8D at 28mm. More surprising was how well it did against prime lenses in its range, especially at maximum aperture, where sharpness is often an issue. While Sigma's own 24mm f/1.4 logged a better SQF score at f/2 at our highest

magnification of 20x24 (it's one of the sharpest lenses we've ever tested), at 35mm this new zoom lens did slightly better than Sigma's 35mm f/1.4. It also outshone Canon and Nikon's 24mm f/1.4 models as well as Canon's 35mm f/2.

In our tests using DxO Analyzer 5.3, distortion fell in the Slight range at 24mm and 35mm (similar to the all those primes, as well as Canon's zoom), but at the mid-focal length of 30mm, this lens tamed distortion to an Imperceptible (0.08%) pincushion, nice for a wide-angle. And it iced the 2004 Nikon zoom, which showed Very Visible distortion at 28mm and 35mm.

Vignetting, gone by f/3.5 at our three tested focal lengths, beat the Canon primes by more than a stop and both the wide-angle zooms at 24mm and 35mm. Plus, close focusing, at 10.37 at 35mm, led the pack by as much as an inch, and this zoom also provided the best subject magnification, with a maximum ratio of 1:3.16.

TEST RESULTS

DISTORTION: At 24mm, 0.22% (Slight) barrel; at 30mm, 0.08% (Imperceptible) pincushion; at 35mm, 0.15% (Slight) pincushion

LIGHT FALLOFF: At 24mm, gone by f/3.5; at 30mm, gone by f/3.5; at 35mm, gone by f/3.5

CLOSE-FOCUSING: 10.45 inches

MAX. MAGNIFICATION RATIO: At 24mm, 1:7.28; at 30mm, 1:6.51; at 35mm, 1:3.16

SPECIFICATIONS

24–35MM (24.84–34.30mm tested), f/2 (f/1.92–2.14 tested), 18 elements in 13 groups. Focus ring turns 130 degrees. Zoom ring turns 60 degrees. Focal length marked at 24-, 28-, 30-, and 35mm.

DIAGONAL VIEW ANGLE: 84–63 degrees

WEIGHT: 2.16 lb **FILTER SIZE:** 82mm

MOUNTS: Canon AF, Nikon AF, Sigma AF

INCLUDED: Lenshood, soft case

STREET PRICE: \$999

INFO: sigmaphoto.com



What's Hot
Fastest full-frame zoom, with superb sharpness and distortion control

What's Not
Focusing scale in feet is practically invisible

Who It's For
Available-light wide-angle shooters

Finally, consider the price. With this zoom, you get three popular wide-angle focal lengths at a fast speed, losing only a stop compared with the top primes. If you were to buy Sigma's 24mm and 35mm f/1.4s, you'd spend nearly twice as much. So if you're a wide-angle fan, take a close look at this trailblazing zoom.

—Julia Silber and Jeanette D. Moses

SUBJECTIVE QUALITY FACTOR

Our standard lens test, SQF rates sharpness by print size

Size	5x7	8x10	11x14	16x20	20x24
2.0	96.9	96.0	93.7	89.3	83.9
2.8	87.1	96.3	94.2	90.2	85.3
4.0	87.0	96.1	94.0	89.7	84.5
5.6	87.1	96.2	94.1	90.0	84.9
8.0	97.1	96.2	94.0	89.9	84.8
11.0	96.8	95.8	93.5	88.9	83.3
16.0	96.4	95.2	92.6	87.2	80.6

Size	5x7	8x10	11x14	16x20	20x24
2.0	96.2	95.0	92.1	86.2	78.6
2.8	96.4	95.3	92.7	87.0	79.9
4.0	96.9	96.0	93.7	89.2	83.6
5.6	97.0	96.1	94.0	89.6	84.2
8.0	97.0	96.1	93.9	89.6	84.3
11.0	96.9	95.9	93.6	89.1	83.6
16.0	96.4	95.3	92.6	87.2	80.6

Size	5x7	8x10	11x14	16x20	20x24
2.0	97.4	96.9	94.7	90.9	86.3
2.8	97.7	96.9	95.2	91.9	87.8
4.0	97.2	96.3	94.2	90.2	85.3
5.6	97.4	96.5	94.6	91.0	86.5
8.0	97.1	96.2	94.1	89.8	84.7
11.0	96.8	95.9	93.5	88.9	83.3
16.0	96.4	95.3	92.6	87.3	80.6

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Mixing Light

If you are going to experiment with fluorescent lighting for color film, what better way to do so than with a lovely model. New York pro Jerry Yulsman worked with June Elliot as his subject to find that if you do everything right, you can wind up with a cover shot. He used a 4x5 Linhof, 150mm f/4.5 Schneider Xenar lens, and Kodak Ektachrome Daylight film, lighting the set with a mixture of daylight and fluorescent tubes, plus a yellow filter to produce slightly warmer tones. His exposure: 1/2 sec at f/5.6.

60 YEARS AGO

We ran an article about how to compose dynamic cloudscape.

A New Perspective

When professional photographer Hans Namuth wanted an unusual photo of his daughter Tessa, he moved down to get her against a smooth sky. Namuth, who is noted for pictures of modern artists, used a Primar Reflex (a medium-format SLR). A yellow filter brought out the clouds. His exposure was 1/100 sec at f/11.



Lively Yearbook

The photo staff of the Indiana University yearbook, *Arbutus*, came up with this lively, interesting new



approach to photos and layout as exemplified by this page featuring Jane Russel. High-speed Kodak Tri-X film and Promicrol developer plus 35mm cameras to shoot by available light helped make this goal both possible and practical.

Braving Bad Weather

Nelson Raymer of Reardon, Washington, made this impressive photo of a steam locomotive as part of a camera club assignment to photograph "smoke." He used a Contax S (35mm SLR) and Kodachrome Daylight film. His exposure, 1/50 sec at f/3.5, was made just as the engine's light came on.

—Harold Martin



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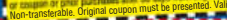
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62496/62516

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SCISSOR SUPER COUPON

Customer Rating

2500 LB. ELECTRIC WINCH WITH WIRELESS REMOTE CONTROL

\$59.99

REG. PRICE \$149.99



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SCISSOR SUPER COUPON

2.5 HP, 21 GALLON 125 PSI VERTICAL AIR COMPRESSOR

CENTRAL PNEUMATIC

Customer Rating

LOT 67847 shown
61454/61693/62803

\$149.99

REG. PRICE \$219.99



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SCISSOR SUPER COUPON

40 PIECE 1/4" AND 3/8" DRIVE SOCKET SET

• SAE and Metric

Customer Rating

LOT 61328/62843
47902 shown

\$3.99

REG. PRICE \$9.99



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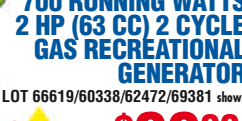
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NEW

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SCISSOR WOW SUPER COUPON

1500 WATT DUAL TEMPERATURE HEAT GUN

(572°/1112°)

\$8.99

REG. PRICE \$29.99



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SCISSOR WOW SUPER COUPON

3-IN-1 PORTABLE POWER PACK WITH JUMP STARTER

CENTECH

Customer Rating

LOT 60657 shown
38391/62306/62376

\$39.99

REG. PRICE \$59.99



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SCISSOR SUPER COUPON

NEW

12" SLIDING COMPOUND DOUBLE-BEVEL MITER SAW WITH LASER GUIDE

\$134.99

REG. PRICE \$299.99



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SCISSOR SUPER COUPON

TWO TIER COLLAPSIBLE EASY-STORE STEP LADDER

Customer Rating

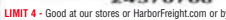
LOT 67514

\$19.99

REG. PRICE \$39.99



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SCISSOR SUPER COUPON

60 LED SOLAR SECURITY LIGHT

Bunker Hill Security

Customer Rating

LOT 62534/69643 shown

\$31.99

REG. PRICE \$59.99



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SUMMER SOIRÉE

An antique camera for a retro party

I MADE THIS portrait of Gin Minsky at the Jazz Age Lawn Party on Governors Island in New York City, where I was hired to

photograph the VIP guests. I've become close with many of the performers from years of shooting the event, and this allows me the freedom to produce better images. I shoot with period equipment and film, so my techniques

ABOUT THE PROJECT

Berliner took more than 500 photos on Fujifilm Instant FP-100C film with his large-format Graflex Series C.

fit in with the event's 1920s theme. My idea for this shot came from the event itself and the era that inspired it, along with the beautiful handcrafted attire worn by the performers.

—As told to Sara Cravatts

Focal length: 45mm Exposure: F/2.8 1/320sec

SP 35 mm & SP 45 mm



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